MUSIC, HARMONY

PRACTICAL COMPOSITION

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LOGIER'S

COMPREHENSIVE COURSE IN

MUSIC, HARMONY,

AND

PRACTICAL COMPOSITION,

EDITED BY

CARL STEIN.

WITH AN ABRIDGED TREATISE FROM HECTOR BERLIOZ'S STANDARD WORK ON

INSTRUMENTATION,

WITH HINTS ON CONDUCTING.



CARL FISCHER, INC.

COOPER SQUARE NEW YORK

CHICAGO 306 S. Wabash Ave.

PREFACE TO THE AMERICAN EDITION.

In preparing this edition for the American student the editor has used extreme care to render all ambiguous definitions, examples and explanations perfectly clear and intelligent as well as free from all errors, a matter of vast importance to the puzzling student unable to obtain the services of a teacher.

The author throughout this great work has closely followed the dictations of nature, pointing out the source of each subject as it appeared, and so ingeniously has he interwoven them that the foundation of the entire subject of Harmony is mastered apparently without effort.

High-flown, flowery language and technical terms are supplanted by plain common sense English that all can readily comprehend.

The two subjects, Harmony and Instrumentation, are so closely connected the one with the other that the addition of Berlioz's work in abridged form will prove valuable as well as convenient.

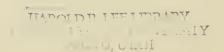
The editor takes this opportunity to acknowledge valuable assistance from Messrs. Theron D. Perkins and Arthur E. Harris.

That this work may prove a grand stepping stone for the advancement of American students and musicians is the ardent wish of the publisher and

THE EDITOR.

BOSTON, Aug. 1885.

Michaed II. Aucei



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A BIRD'S EYE VIEW

OF THE

RUDIMENTS OF MUSIC,

AND AN

EXPLANATION OF MUSICAL CHARACTERS,

BY

JOHN GREEN.

Preliminary information intended to precede Logier's System of the Science, supplying all that is necessary to be known before studying that work.

It is the written language of music which we here propose to explain, and of that merely and simply the characters employed in writing it. Many different nations employ, in writing their language, characters peculiar to themselves: the Roman character is very generally employed by European nations, America, etc.; but there is no one universal character, any more than there is one universal language, excepting only that of music. Painting and sculpture are, indeed, universally understood, as they closely imitate Nature; but the written language of music is completely artificial, and its general adoption is the strongest proof of the excellence of the invention, at the same time that it is the most happy means of extending throughout the world a knowledge of this softener and solace of the human race.

Let us take up a music-book; we see a page filled with various characters, lines, and points, utterly unintelligible to the uninitiated, although the practised musician will read and understand it nearly as well as if he actually heard the very sounds therein depicted.

We see the same characters pervade every music-book, whether written for one nation or another, or for any of the various musical instruments or voices. We consequently conclude that these characters are suited to all the circumstances incidental to written music, and that they are so contrived as to be read by every musical nation.

Let us now examine more closely into this page, first observing what are the most striking peculiarities, the characters most conspicuous and most frequently employed.

The most remarkable circumstance is the continual employment of the five lines ruled across the page: upon these five lines are written all the other characters; for this reason they are called the *Staff* (in French, La Portée), as bearing all the notes in music. *Notes*. What are they? A bank note is the *representation* of a sum of money; a musical note is the *representation* of a musical sound.

Those are notes which you see written upon the staff. Some of the stems are turned up, and some down; this is of no consequence whatever, being merely a matter of convenience in writing. Some of the heads are white, and some black; this applies only to the length of time which each note shall continue to sound.

Then again, some of the stems are returned once. twice, or thrice, or several stems are attached together by one, two, or three mark; all this applies also, only to the length of time which each particular note should be heard.

In fact, the essential point is only the exact situation of the head of the note upon the staff, i. e. upon or above what line it is written.

14,004— (v)

But, after having ascertained this, it is a natural question: What sound does the note then represent? Only imagine how extremely difficult it must once have been to describe, in a letter to a friend, any particular sound: you might send something which would produce the same sound, but you could not describe it in words without some such invention as this, the value of which, on a closer examination, you will be able to appreciate.

Let us see how, by means of this staff, we are enabled to note down any - nay, every sound.*

But first—How many sounds are there? And how have we agreed to name them? A stranger will be surprised to hear that there are only seven musical sounds, which are distinguished by the first seven letters of the Roman alphabet, ascending thus, step by step: A, B, C, D, E, F, G, called a scale, † also sometimes gamut. ‡ If we ascend still higher, the sounds will only be a repetition of these first seven, but more acute, shriller, or, as we may say, smaller (a, b, c, d, e, f, g,); and thus we may continue to ascend to the highest conceivable sounds, which will only be miniature likenesses of some of the original seven. As the notes of this scale descend, the sounds represented are lower, deeper, more grave, etc.

Well then, here is a note o. What sound does it represent? Certainly none in particular. Because it is not written upon the staff.

Let us place it on the staff: Here it is written on the second line. (These lines being always counted upwards.) What note is it now? That is still a mystery;—but we will furnish a key to it. This new character the French called clef, or key. It was originally a fand still bears some resemblance to it.

What sound does the note above written now represent? G; because it is written on the second line, with the G clef placed on that line.

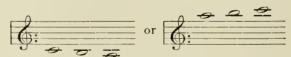
This G clef then, on whatsoever line it may be written, determines the name of every note which may be written upon that line. Were this clef placed on the first line, a note written on the first line would be called G; but in this country it is generally placed upon the second line; and we will shortly enquire into the reason for this preference.

The situation of G (the last of the seven sounds) being thus determined, the Musical Alphabet commences with the note immediately above it, thus:—



This principle being once adopted, we may ascend or descend still further, according to the compass of different voices or instruments.

If we wish to represent sounds lower or higher than the staff of five lines will admit, it is evident that we shall be obliged to enlarge the staff by adding more lines; and it has been found convenient, when more are wanted, to make them *legère*, or light lines (*ledger* lines), to be used only for the particular occasion, preserving the staff apparently of five lines only, thus:—



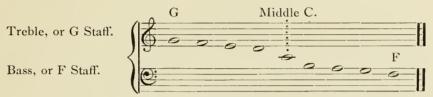
Even after all this, we require something further—something to fix and determine the actual sound or pitch of some one note, from which we may find the rest.

In ancient choirs, boys and females were supposed to sing easily only the notes contained within the Treble \(\) or G staff, \(i. \) e. not ascending higher than G, nor descending lower than D.

- * This word must always be understood as a musical sound.
- † From Scala, a ladder or staircase.
- ‡ From Gamma (the Greek letter G) and Ut, the Latin syllable used, in singing, for the note C.
- § In early times of counterpoint, voices of different compass were classed in four distinct divisions, at the distance of a third above each other, expressed by the bass clef placed upon four lines, one immediately above the other: the lowest of these was called the *Tenor*, the next *Contra Tenor*, the third *Motetus*, and the highest Triplum, or Treble; of which latter term this was the origin.

This is something towards the point, but still a very doubtful mode of deciding the pitch, though for a long time the best that could be had.* Afterwards, by some fortunate concourse of circumstances, all nations adopted the same arrangement of the keys of the harpsichord (pianoforte) and similar instruments; and from frequent communication, artists of every country constantly comparing notes, all these instruments are found to be constructed and tuned so as to vary very little from one and the same pitch; thus, by a reference to the pianoforte, we are enabled to describe, with sufficient accuracy, any particular sound.

It will, perhaps, be sufficient for our present purpose to state, that, before the addition of the extra keys, the key in the *middle*—equally distant from both ends of the pianoforte key-board—was C (called *Middle* C); and the note which represents it is written upon a line exactly in the middle between the treble staff and the bass staff. The bass clef we have not yet noticed; but here it is, exhibited at the commencement of the lower staff:—

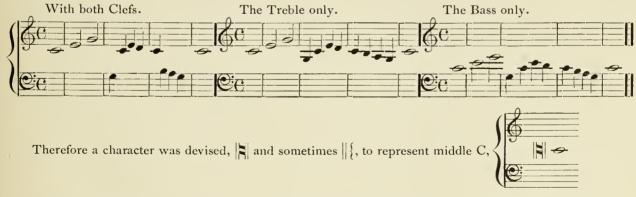


This Bass Clef was originally an J, since corrupted in its shape; and it may be placed (like the G clef)

upon any line, deciding the name of any note there written to be F; but its situation on the *fourth* line is preferred for the same reason that the G clef is placed on the second, that is to say, in order that a regular continued scale may be written from the highest note to the lowest, by bracing together two staves, as is usual for music intended for the pianoforte or any other instrument, comprising so extensive a compass.

Middle C here becomes a conspicuous note, and we find it generally referred to where precision is necessary: a lady is rarely required to sing any note lower, and a gentleman with a bass voice is as rarely required to sing any higher.

These two clefs, the Treble and the Bass, would evidently answer every purpose; and it is only to spare the trouble of using both, that another clef has been employed, for voices whose compass is immediately between the bass and treble, for which, without this contrivance, either both clefs must be used, or too many ledger lines, thus:—

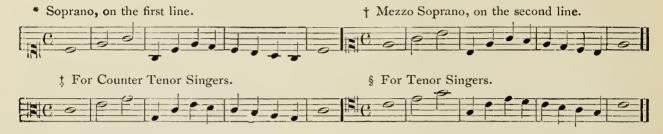


On whatsoever line is placed this character (which is called the C clef), on that same line must be written the note intended to represent the sound, *middle C*.

If this clef should be placed as above (on the middle ledger line), it would be unnecessary, middle C being written upon that same line if either the treble or the bass clef be used; but if we place this C clef

* We are now enabled to ascertain precisely a pitch, which must be the same all over the world. It is known that a musical sound may be produced by alternately stopping and opening a current of air with sufficient rapidity; and as the rapidity is increased, so is the pitch of the sound elevated; so that if 200, in a second of time, produces a certain sound, 400 will produce its octavo above, and vice versa.

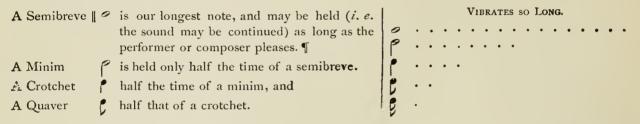
upon the first line, then *middle C* must be written two notes higher than with the treble clef, and every other note, of course, the same: in such case, the above Example would be written thus:—



The two latter are the situations in which this C clef is most commonly used.

It may be thought that too much has been said regarding this C clef; but its employment is a subject of much public discussion at the present moment, and is well deserving attention.

It will be borne in mind that our object is merely to make the reader acquainted with the characters employed in writing music. Scarcely anything more than what we have already noticed was necessary for primitive psalmody, consisting of a succession of simple notes, all of equal length; but when it was found expedient, for melodious effect, sometimes to dwell longer upon one note than another, it became necessary to measure the time, and decide how much should belong to each particular note. Many contrivances were resorted to, but the plan now adopted is in use over all the civilized world, from its simplicity and the ease with which it is written, thus:—



Even in modern psalmody, we never see the time subdivided further than this; but having once established the principle, that half a crotchet is represented by returning the stem once, we may subdivide that again by making two returns and that again by a third and so on without limit. When several notes of

the same kind successively occur, they are, as may be said, tied together by the tails.

A quaver is equal in time to two semiquavers (or half quavers) and it is equal to four demissemiquavers

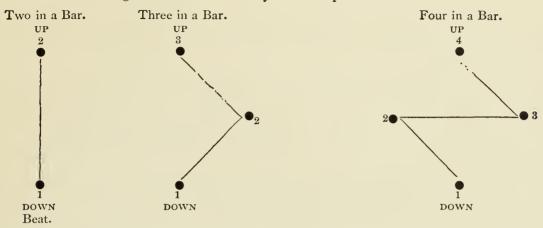
After having thus contrived to indicate by the *shape* of the note the proportionate length of time belonging to it, we might suppose that nothing further was necessary; and, indeed, it was some time before *Bars* (which we perceive drawn across the staff) were in general use.**

They are found, however, to assist the performer very much; especially in concerted pieces, where sev-

- * Soprano from Sopra, upper; for the highest voices.
- † Mezzo Soprano almost the highest.
- † Counter Tenor or Alto a man's voice; higher than the tenor; sometimes, a female voice lower than usual.
- § From Teneo, I hold. Formerly, the tenor was considered the chief part, and usually sustained the subject of the air.
- || The old Notes were A Large, A Long, A Breve or Short, and this Semibreve or Half a Breve. The improvement upon the points of Guido is attributed to John de Muris, an advocate of the Parliament of Paris, in the 14th century.
- ¶ Maelzel's Metronome (or Time-Measurer) enables us to mark precisely the degree of rapidity intended, instead of employing the vague terms, Andante, Allegro, etc., still partially in use. Indeed, a yard and a half of fine string, with a weight at the end, would form a pendulum sufficient for the purpose, the wall upon which it may be hung being graduated to mark the various lengths required Another is a deal rod with a scale marked upon it, and having a moveable weight.
 - ** The old madrigals were written entirely without them.

eral persons perform together in concert: a director is enabled to keep the whole together, by audibly or visibly marking the commencement of each bar, which is called beating time.

The method of beating time with the hand may be thus explained: -



Whatever number of notes are contained in a bar (i. e. in the space between two bars) must, in the performance, occupy exactly the same time as those in any other bar in the same piece.*

To show the end of the piece, the double bar is sometimes marked thus: and sometimes the word Fine is added beneath:

Bars are sometimes scored across many staves, even from top to bottom of a page which may contain the parts for many different instruments, all of which are intended to be played together, as in an orchestra. This is called writing in score—the several staves being bound together by a Brace { and whatever number of staves that embraces are considered as only one line of music.

The *Time Mark*, placed at the commencement of every composition, determines what shall be the contents of each bar. Of these there are several in use.

Figures indicate fractional parts of a semibreve.

means three fourths of a semibreve, i. e. three crotchets in a bar ; one crotchet being one fourth of a semibreve.

2 means two crotchets in a bar , and 6 six crotchets etc., etc.

The eighth of a semibreve is a quaver; therefore,

g means three eighths of a semibreve, i. e. three quavers in a bar

^{*} The commencement is sometimes an imperfect bar, which will be found completed by another imperfect bar at the end of the strain, which may thus be repeated without any interruption to the time.

§ means six quavers, and § nine quavers in a bar , etc., etc.; the upper figure indicating the number in a bar, and the lower figure signifying the description of note.

Sometimes it is required that one part (or performer) shall remain silent for some portion of the time; therefore, some characters are necessary to represent *silence*, corresponding with the time of the different notes: these are called *Rests*.



A *Dot*, placed after a note or rest, *lengthens its time one half*. This contrivance was not absolutely necessary; for the same effect would be produced by writing the note which corresponds with half its own length, instead of the dot, and *binding* the two together by a curved line, which is in this case called a *Bind* or *Tie*.

Sometimes two dots are employed (called a Double Dot), the second dot being half the value of the first dot.

A Sharp (\sharp) raises a note half a tone, and is supposed to have been originally a double f(f) the first note made sharp being F.

A Flat (7) lowers a note half a tone, and is supposed to have been a b, round or soft (in French Bè mol), in contra-distinction to

A Natural (\$\mathbb{I}\$, Bè dur) a Gothic hard B, which brings any note back to its natural state, after having been made \$\mathbb{I}\$ or \$\mathbb{I}\$.

A Double Sharp (*) raises a note two half tones. A Double Flat (b) lowers a note two half tones.

The number of sharps or flats, placed at the beginning of a staff, is called the Signature, as it is the sign by which the key or scale is known; if there are none, the composition is said to be in the natural key, and would be played on the white keys only of a pianoforte. It may be said to be only by accident that these characters are made use of any where, except at the commencement of the staff; when they do thus occur, they are called Accidentals.

Each # or b in the signature affects the note throughout the piece.

Many of the characters which we see in modern music, are employed to describe the mode of performance—mere matters of taste: curved lines are variously used for this purpose.

A Bind, or Tie, is drawn from one note to another of the same sound — in this case, the sound of the first is continued, without intermission, the length of time indicated by the second.

A Slide, or Slur, is drawn over several different notes, and directs the passage to be played smoothly without interruption.

A Slide over three notes with the figure , indicates that those three notes must be played in the same time as if there were only two.

Staccato; when the notes are marked with little dots (...) or dashes (...) over each, they are to be played short and abruptly, as if you were playing upon sticks.

A Pause (?) prolongs the note or rest over which it is placed, beyond its proper value; creating a pausin the time at the discretion of the performer.

Crescendo — the sound to be gradually increased.

Diminuendo _____ the sound to be gradually diminished

P-Piano or soft. F-Forte or loud.

The Appoggiatura is a small grace note written before the essential one, from which latter the time given to the appoggiatura must be deducted; this depends entirely upon the taste of the performer, who is not guided by the kind of note in which the appoggiatura is written.

The Passing Note is written after the essential one, from which it takes its portion of time. A Shake, $^{\text{w}}$, Trill, tr, or Turn \sim .—Embellishments difficult to be described by words.

8va under Bass notes, implies that the octaves below should be played with them; when written above treble notes, it means that the passage should be played an octave higher.



Marks of abbreviation are generally employed to spare the trouble of writing again the same group of notes or passage, when immediately repeated, thus; — for a group of quavers; = for a group of semi-quavers, etc. These, however, are seldom used in printed music.



A SYSTEM OF THE SCIENCE OF MUSIC,

HARMONY,

AND

PRACTICAL COMPOSITION.

THE SCALE, OR MUSICAL ALPHABET.

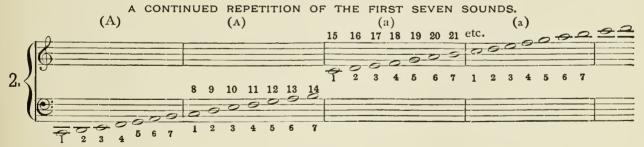
Music may be considered a language, whose alphabet consists of only seven sounds; by the different combinations of which, all musical effects are produced.

When these seven sounds are arranged in the following order, they are called collectively



The eighth sound (or octave) bears the same name as the first, and must be considered merely as a repetition of that sound. In the same manner, were we still further to ascend in the scale, the 9th would be a repetition of the 2nd, the 10th would be a repetition of the 3rd, and thus we might continue to repeat every note of the scale or musical alphabet.

This, perhaps, may be more clearly understood by reflecting that, in ordinary language, we always consider any letter as the same in sound, whether it be written large or small, A A a or a; thus the following example (being the notes representing the white keys of the pianoforte) is merely an extension of the scale, or



Now let us minutely examine Example 1, which is called

THE DIATONIC SCALE.

On looking at the keys of the pianoforte, we perceive that between the first note C, and the second note D, there occurs a black key, which is called C sharp.*

* When we place a sharp (\$) before a note, that NOte 3 raised a half tone. The gamut-board would be found useful.

Thus, then, we say, — It is a whole tone from C to D, because there is a note half way between them, called C sharp.

From D to E is also a whole tone, because D# occurs between them.

From E to F is only a half tone as there is no sound between them.

From F to G is a whole tone.

And so with the rest, except from B to C, which we find is only a half tone.

To show this at one view, let us again write the scale; and, whenever a whole tone occurs, we will insert the sound which intervenes; the whole will then appear, as in the lower staff of the following example, thus forming a scale of half-tones, called the *Chromatic Scale*.



The pupil is requested to take particular notice how, by the method of conveying instruction here pursued, matter continually produces *new matter*, as is exemplified in the above production of the Chromatic Scale; we see that, in demonstrating the construction of the Diatonic Scale, we have unconsciously, as it were, produced a new one, containing twelve *half* tones.

DEFINITION OF THE DIATONIC SCALE.

Should it be asked, "What is a Diatonic Scale?" it may be described thus: -

"A Diatonic Scale consists of seven sounds, and an eighth, which is merely a repetition of the first. The progression of these sounds is by whole tones and half tones, and the half tones occur between the 3rd and 4th and between the 7th and 8th*."

We shall in future consider this progression as a model for all Diatonic Scales, at whatsoever note they may commence †; and

"The note with which a scale commences we shall call the key note."

Each sound of the Chromatic Scale may be employed as a key note; and as that scale contains twelve sounds, it accordingly gives us twelve key notes, on which we may construct twelve scales.

The Diatonic Scale of C (Ex. 3) is called the Natural Scale, because it does not require accidentals (sharps or flats) to produce it, the half tones being found in their proper places without them. If, however, we select any other of the twelve sounds of the Chromatic Scale as a key note, the half tones of the scale arising from that key note will not be found in their proper places; for instance, let us select D as a key note, and write the scale as in Ex 4. If we examine the sounds of that scale, we shall find that (as it stands at present) the half tones do not occur where they ought, according to our model; on the contrary, we find them between the 2nd and 3rd, and between the 6th and 7th, as marked by the curved lines.



In order to preserve the progression as prescribed by our model, it is necessary to raise the F and C a nalf tone by placing a # before each of them, and thus the half tones will be thrown into their proper places, and produce the Diatonic Scale of D perfect.

- * A satisfactory reason for this progression by tones and half tones, and the foundation on which it is established shall be given hereafter; at present, the pupil could derive no advantage from being made acquainted with it.
 - † To the Teacher This, of course, has reference only to major scales, hereafter to be explained.
 - I Here, again, new matter is produced, arising out of the Chromatic Scale.

Here we see how the necessity of employing the sharp originated, and why two are required in the scale of D.



Recapitulatory Questions.

How many sounds are there in the Diatonic Scale? Seven.

How many in the Chromatic Scale, and how do they proceed? Twelve; and they proceed by half tones.

How many keys are there, therefore, as far as you know? Twelve.

Whence do they arise? From the Chromatic Scale.

The pupil should here form other Diatonic Scales according to the prescribed model, and may be thus encouraged to reflect on its construction: take, for instance, the key of F#, and having written the notes of that scale, simply as they follow in their ascending progression (that is without sharps), let him be asked to demonstrate that six sharps are necessary to preserve the half tones and whole tones in their proper places; he will reply thus:—

"From F# to G is only half a tone; but, as between the first and second must be a whole tone, I will raise the G a half tone." (Here he places a #before G.) "From G# to A is a half tone; but it must be a whole tone: I will, therefore, place a #before A. From A# to B is a half tone; and so it should be. From B to C is but half a tone; I will, therefore, raise C a half tone. From C# to D is again a half tone; D must be raised half a tone. From D# to E is again a half tone; I shall, therefore, raise E and make it E#; and as E# is the same sound (on the pianoforte) as F, both sounds being represented by the same key,* F will require a sharp in order to raise it a half tone; and thus we preserve the half tone between the 7th and 8th of the scale."

Proceeding in this manner, every scale which the pupil writes may become an instructive lesson for the exercise of the reasoning faculties, which, by being thus early brought into action, will not only produce in him a desire for higher attainments, but encourage and stimulate him to increased mental exertion.

In order that he may acquire the utmost facility in these mental exercises, he must be encouraged to construct those scales which require double sharps.† In doing this, it is only necessary to keep in mind that the scale of C is perfect, requiring no sharp; if we raise the key note of that scale a half tone, it follows as a matter of course, that each note in that scale must likewise be raised a half tone, in order to preserve the progression of the original model; and, as the Diatonic Scale contains seven sounds, seven sharps will be required. By observing these rules, we come to the conclusion, First: that if we construct a scale which requires more than 7 sharps, all above that number must be double sharps. Secondly: That, as the first note made sharp (as in the key of G) was F, so the first note made double sharp (as in the key of G#) must be F also.

How many sharps are required in the scale of G#? (Reflection of the pupil.) "The key of G has one sharp; but as I have raised G a half tone to G#, I must add seven sharps; the key of G#, therefore, has eight sharps."

How many double sharps? One.

What note requires the double sharp? F.

Pursuing the same course of reasoning, we find that the key of A# will require ten sharps; and thus we may proceed round the whole circle of keys with double sharps.‡

As the perfect recollection of the number of sharps \(\) required in any key is absolutely necessary, and as the difficulty of recollecting them all has often been found almost insurmountable, even by those gifted by nature with a tolerably good memory, it is presumed that the following simple and infallible method of overcoming this difficulty cannot be too highly appreciated. The advantages resulting from it, even at the present stage, must be evident to the learner; but they will be still more so when he shall have been introduced

- * This is called an enharmonic change, more fully explained in Ex. 10 and 11.
- † To spare the trouble of writing two sharps, a cross (*) is used to represent a double sharp.
- # Bacon says "that which goes beyond practice leads to perfection."
- As well as flats, as shall be shown hereafter

to the study of modulation. Indeed, it would be almost impossible to make progress in that branch of the science, unless he were acquainted with this peculiar method. He is, therefore, recommended (above all things) not to neglect taking advantage of this happy discovery, which may be learned in half an hour, although the explanation of it in writing appears to require many words.

EASY METHOD OF IMPRESSING ON THE MEMORY THE NUMBER OF SHARPS BELONGING TO EACH KEY.

The *left* hand of the pupil being held open with the palm turned towards him, and having given the name of C to the wrist, let him call the thumb G.

Transcy rot mining outer t	110 0	 -	•		•		•		•	•	.
The first finger	•			•		•		•			D.
The second finger			•		•		•		•	•	A.
The third finger		•				•		•			E.
The fourth finger					•						В.

The fourth finger of the right hand (to complete the circle) we shall call F.





By holding up the thumb of the left hand (G) alone (closing the rest of the hand), we are instructed that the key of G requires only one sharp.

Without removing the thumb, let the first finger (called D) be added; these two fingers point out that there are two sharps in the key of D.

When the second finger A is added to the other two, we are reminded that A has three sharps.

How many sharps are there in the key of E? (Here the pupil adds the third finger E to the former and answers) Four.

How many sharps in the key of B? (Here the fourth finger is added and the answer is) Five.

How many in F#? (The fourth finger F of the right hand is added, and the answer is) Six.

How many sharps in C? (Pointing with the *right* hand to the wrist of the *left*, the pupil answers)

Thus, the *number* of sharps required in each key has been discovered; but how shall we ascertain which of the notes of the scale require sharps? The answer is, By precisely the same method.

How many sharps in the key of G? One.

Which note requires the sharp? (Hold up the fourth finger of the right hand, and answer) F.

How many sharps in the key of D? (Answer) Two.

What notes require sharps? Answer (holding up the fourth finger of the right hand) F, (and then pointing to the left wrist) and C.

The next (according to the *order* in which the *notes requiring sharps* present themselves) will be G, D, A, E, B; and should we proceed to *double* sharps, the first double sharp would be F; then C, then G, D, A, etc., etc.

It will be observed that hitherto sharps only have been used; the pupil shall now be introduced to flats also. Preparatory to which, however, it will be necessary that he accompany us once more back to Ex. 2 and examine it.

THE FLATS. 5

There, because the Diatonic Scale ascended, it produced an ascending Chromatic Scale; and as the half tone which followed C could be no other than C#, etc., these auxiliaries, called sharps, first naturally presented themselves. But suppose we were to reverse this order of things, and make the Diatonic Scale descend, what would be the result? A descending Chromatic Scale. And, as in the ascending Chromatic Scale, the notes producing the half tones were raised by sharps; so, the notes in the descending Chromatic Scale producing the half tones, must be lowered by flats. This points out the use of flats.



Now let us examine the above Descending Chromatic Scale.

From C to B is a half tone. From B to A is a whole tone; the black key which lies between them being half a tone below B, must be called B^{\flat} , (instead of being called A^{\sharp} , as in the *ascending* Scale). From A to G is a whole tone; the black key which lies between them is here called A^{\flat} and not G^{\sharp} . And thus proceed with the rest.

Each of the sounds of the descending Chromatic Scale may (like those of the ascending) be employed as a key note. Let us take E as a key, and proceed in the examination of the scale; as follows:—



What is the distance from Eb to F? A whole tone.

Is this correct? Yes. Why? Because between the first and second must be a whole tone.

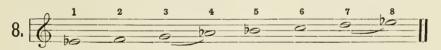
From F to G? A whole tone. Is this correct? Tes. Why?

From G to A? A whole tone. Is this correct? No.

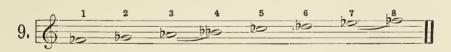
Why? Because between the 3rd and 4th should be a half tone.

How shall we reduce it to a half tone? By placing a flat before A.

Thus proceeding with the rest, the scale of E[†] is perfected, as in the following example:—



As the formation of a scale requiring flats must now be clearly understood, no difficulty can possibly arise in writing a scale on any given key note. In the following example a double flat is required.



Why is a double flat placed before B? Because it is necessary to lower the B two half tones; from Ab to Bt, being three half tones, whereas it should be only one.

Thus the pupil may proceed through all the scales with single and double flats.

METHOD OF IMPRESSING ON THE MEMORY THE NUMBER OF FLATS BELONGING TO EACH KEY.

The order of the *flats* will be found to be merely the *reverse* of that of the sharps; that is: instead or proceeding from the left hand to the right, we commence with the *right* and proceed to the *left*; still, however, calling the fingers by the same names as heretofore. Thus, then, beginning with the fourth finger of

the right hand F (not F#), we next take the fourth finger of the left hand, which shall now be called B \flat —then E \flat —then A \flat —and so on with the rest.

The following interrogatories will render this matter crear:

How many flats are required in the key of F? (The pupil, holding up the fourth finger of the right hand, answers) One flat What note requires to be made flat? (Here the pupil, holding up the fourth finger of the left hand, answers) Bb.

How many flats in the key of $B^{\frac{1}{2}}$? (The pupil, holding up the fourth finger of the right hand and the fourth finger of the left hand together, answers) Two flats.

What notes require flats? (The pupil, holding up the fourth and third finger of the left hand, answers) Bt and Et.

What key has six flats? G^{\flat} .

What notes are flat? B^{\flat} , E^{\flat} , A^{\flat} , D^{\flat} , G^{\flat} , and C^{\flat} .

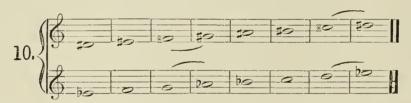
The double flats are found in the same manner as the double sharps, viz., by adding seven. For instance: the key of F requires one flat, therefore the key of Fb will require eight flats;—and as the key of Eb has three flats, so, on the same principle, the key of Ebb has ten.—The first note made flat is also the first to be made double flat.

ENHARMONIC CHANGES.

In analyzing the Diatonic Scale, ascending (Ex. 3), and descending (Ex. 6), we find that each sound on the pianoforte may have two different names; for instance, the black key between C and D is, in the ascending scale, called C# (being a half tone above C); but in the descending scale, the same key is called Db because it is the half tone below D.—The half tone between D and E in the ascending scale is called D# because it is the half tone above D; but, in the descending scale, the same key is called Eb. This is called an enharmonic change.

Whole scales may thus be changed enharmonically, as in the following example:

It is of importance that the pupil should here be made to understand, that though the sounds of both these scales are the same*, yet that the reading and playing of the scale of D# (being encumbered with nine #'s) is attended with difficulty; whilst the scale of E may be performed with comparative ease †.



For general purposes, this explanation would suffice; but, in order to show the inquiring and more advanced pupil the ground upon which these enharmonic changes, and the necessity of employing them, rests let him examine the following two rows of figures.

The *upper* row, with sharps proceeding from left to right, represents the twelve intervals of the ascending Chromatic Scale; while the *lower* row, with flats proceeding from right to left, represents the twelve descending intervals of that scale.

If we examine the upper row of figures, it will be evident that the key of C (marked by a cypher when enharmonically changed), will become Dbb, and require 12 flats.

The key of G with one sharp " ADD " II flats.

The key of D with two sharps " EDD " 10 flats.

And thus continue to the end.

- * But only on instruments with keys, like the pianoforte, organ, etc.
- t This shows the use of enharmonic changes, and the reason why composers employ them in their works.

Now commence the exercise from right to left, with the lower row of figures representing the descending Chromatic Scale with flats:

The key of C, enharmonically changed, will become B#, and require 12 sharps. They key of F " " E# " 11 sharps. The key of B? " " A# " 10 sharps.

Thus it is clearly shown that any key with a certain number of sharps will, when changed enharmonically, require as many flats as will make that number twelve. The key of C # having seven sharps, its enharmonic change D ? must have five flats. The key of D # having nine sharps, E ?, its enharmonic change must, therefore, have three flats. We find that when we arrive at 6, from opposite points, the sharps and flats are equalized; for G ? requires six flats, and F # requires six sharps; therefore, to commence a composition with more than six flats or six sharps would be useless; and to change enharmonically a key with few flats or sharps to one requiring many, would be absurd; because the practical use of enharmonic changes is to prevent, in the course of a composition, the accumulation of either sharps or flats; a precaution more especially necessary when extraneous modulations are introduced.

Reflections.

Before we proceed further, let us reflect how, from the simple investigation of a Diatonic Scale, new matter has presented itself at every step—springing up, as it were, almost spontaneously. Let us examine the root from which all the matter in the preceeding pages has emanated, and the process by which we have been enabled to trace that matter in its development.

It is first asserted that the Diatonic Scale consists of tones and half tones, and that the half tones must be between the 3rd and 4th, and the 7th and 8th. We are desired to prove this fact. In doing so, we discover a new scale of half tones, twelve in number, which we call a *Chromatic Scale*, in the formation of which it is found necessary to employ certain agents to raise some notes a half tone; these we call sharps. We have given a name to the *first* sound of the original scale; we have called it a *key note*. We find that each note in the Chromatic Scale may be employed as a key note upon which a scale may be constructed. Thus, twelve scales are immediately presented to our view. But here we find that when one of these notes is selected as a key note, the intervals of the scale arising from it do not proceed according to the original model. The necessity, therefore, of employing a greater or lesser number of sharps, according to the key which may have been thus selected, is evident.

Presently we find that a scale may descend as well as ascend.

A descending Chromatic Scale is thus produced. A new agent must now be found which shall lower a note half a tone, and thus we are introduced to the flats. We find that each note of this descending Chromatic Scale also may be selected as a key note upon which a scale may be constructed. In some scales double sharps and double flats are required, which render the reading of music difficult; to avoid which, enharmonic changes are found to be necessary.

We have now arrived at the close of that part which treats on the construction of the Diatonic Scale.* The author trusts he may not be charged with having said too much upon this subject; for when we consider the innumerable musical works which have already emanated, and are daily being extracted from this inexhaustible source, we are struck with a sense of its importance, which demands our closest investigation, and merits all the attention which we can bestow upon it.

THE COMMON CHORD.

Having already compared the Musical *Scale* to an *Alphabet*, we shall now consider a chord as a word in the language of music. A combination of letters selected from the alphabet forms a *word*; a combination of sounds selected from the scale forms a *chord*.

Thus, if we select the 1st, 3rd, and 5th from any scale, and write them over each other (as in the following example) the combination of these sounds will form a chord, usually called a common chord.† If this chord be played so that the sounds are heard simultaneously, the effect upon the ear, with respect to

^{*} This subject is more elaborately treated at Ex. 64.

[†] This is the combination most *commonly* met with. See also Ex. 63, where this combination (as consisting of the harmonice) is shown to be *common* to every musical sound.

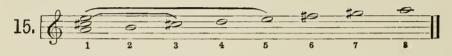
music, will be very like that produced, with respect to language, by pronouncing a word after having spel'ed it; thus, Man, Man.

THE COMMON CHORD EXTRACTED FROM THE SCALE.



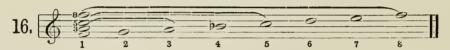
Whatever Common Chord we propose to write, let us (in order that it may be clearly understood) first write the scale of the key note of that chord with the necessary sharps or flats; and then selecting the 1st, 3rd, and 5th sounds, place them each over the other, as above.

THE COMMON CHORD OF "A" EXTRACTED FROM THE SCALE.



To the combination shown in the preceding example, may at any time be added the 8th (or octave), it peing merely a repetition of the 1st, thus:—

COMMON CHORD OF F



These examples (it will be understood) are only specimens of common chords, showing the manner of their construction; it is not expected that the pupil should rest satisfied with these alone as practice; on the contrary, he should write the scales with single and double sharps and flats through all the keys, and extract the chords according to the rule.

While proceeding with these exercises, let the pupil audibly* pronounce each chord, commencing always with the lowest note; then the 3rd, and after that the 5th; thus: the chord of C is C, E, and G. Let him not say C, G, and E; for by so doing he will inevitably frustrate a very important object here contemplated, and which in due time shall be explained. Let the common chord, therefore, at all times, without any exception whatever, be pronounced in this manner, laying a peculiar emphasis on the word and, preceding the last note.

Having attained sufficient facility in extracting the common chord from the scale, the pupil may write the chord from reflection only; thus for instance, if the chord of E be required, let him write E, and then at once add the 3rd and 5th to it as they arise: E, G, and B (as at I).



But as the key of E requires four sharps, it follows, of course, that the G in that chord must have a sharp placed before it (as at II); thus the chord of E is not E, G, and B; but E, $G \sharp$, and B. The same rule must be observed with respect to all common chords.

BASS OF THE COMMON CHORD.

Every chord is supposed to have a bass, called the fundamental bass, upon which it is founded, and which is always the same as the first note of the scale from which the chord is extracted. Thus the bass to the chord of C is C. The bass to the chord of D is D, etc., etc.

Henceforth the bass notes of the chords shall be written on a separate staff, thus:

^{*} This makes a forcible impression on the memory.



It has already been shown that the 8th sound of the scale is but a repetition of the 1st; and, as the bass may now be considered as representing 1, we shall in future figure the chord 8, 3, 5, as exhibited in the preceding example.*

It will be of very great advantage to the pupil, in the progress of his future studies, to be able to write correctly and without hesitation any common chord proposed to him; and he is strongly recommended to make himself perfectly master of this by frequently writing common chords on basses which he may propose to himself; in pronouncing them, let him be careful to follow the instructions already given for that purpose, remembering the word "and" before the last note of the chord.

THE THREE POSITIONS OF THE COMMON CHORD.

This chord consists of three sounds besides the bass; viz., 8, 3, 5. These three sounds are written over each other, and may change their situations in such a manner that each may alternately appear in the *upper*, lower, or *middle* part of the chord.

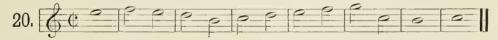
Heretofore the 5th has always appeared in the *upper part*; and when this is the case, we say the chord is in the 2nd position. When the 8th is in the upper part, the chord is in the 3rd position; and when the 3rd is in the upper part, it is in the 1st position.†



Having shown the construction of the common chord as extracted from the Diatonic Scale, and also its three positions, we shall proceed to point out the method of employing it in composition.

First, let us explain the distinction between Melody and Harmony: although both owe their origin to the same source, and are inseparably united, yet they require to be clearly distinguished.

Melody is a succession of single sounds, ascending or descending, thus ‡:—



Harmony is a succession of combined sounds or chords, ascending or descending, as in the following example, which exhibits a portion of the preceding melody harmonized.



- * Should it be asked why do we not figure the several notes of the chord according to their real distance from the bass, viz., 8, 10, 12, as in Ex. 18, Y?—Answer. As the 8th is a repetition of the 1st, so the 10th is a repetition of the 3rd, and the 12th a repetition of the 5th, etc., etc. (See Ex. 2.)
 - † How this arrangement has arisen will be seen at Ex. 63.
 - † The whole of the Diatonic Scale is a melody, and as such it will be treated when we begin to harmonize.

A scale has been compared to an *alphabet* (Ex. 1). A chord to a word (Ex. 14); and if we pursue this analogy a little farther, we may compare a *succession of chords* to a sentence. Now, between the various words which compose a sentence there must necessarily subsist some connection, in order to produce sense: so it is with a succession of chords; there should subsist some connection in order to produce a proper effect. The connection required is, that in an immediate succession of any two chords there shall be found one sound which is common to them both.*

In the preceding example, at a, we perceive, by the curved lines, the links which constitute the chain of harmony. In order that the pupil may form a just estimate of the necessity of this connection in a progression of chords, the same melody is exhibited at b, accompanied by chords indeed, but without any of the connecting links above mentioned. Let the pupil play these two exercises and compare the different effects.

It shall now be shown how a melody may be harmonized so that this necessary connection of the chords shall be effected; and that each note of the melody shall have its proper chord, and the whole its appropriate harmony.

The first step towards this object is to discover the proper fundamental basses; but how is this to be done? The melody itself shall point out the way; and the basses being thus found, they, in return, shall furnish the harmony with which that melody shall be accompanied.

DISCOVERY OF THE FUNDAMENTAL BASSES.

Let us take the scale as a theme to be harmonized; and, in order to find the fundamental basses, let us write over the notes the figures 8, 5, 3, as in the following example †:—



The figure 8, placed over the first note, points out the bass to be an octave or eight notes below; the 5 over D discovers the bass of this note to be a fifth below; and so on with the rest, which, when completed, will appear thus ‡:—



In the preceding example it will be perceived that there are only *three* bass notes; C is employed four times, G twice, and F twice. Each of these three fundamental basses has its peculiar name.

The first is called the *tonic*, which is always the same as the *tone* which gives the name to the scale; for instance, the preceding example is in the scale or key of C, therefore the tonic is C.

- * There are, however, exceptions to this general rule, which shall be explained in the proper place.
- † A reason for this arrangement will be seen in the introduction to Modulation, Ex. 64 and 65.
- † The simplicity of this method, and the ease and certainty with which the pupil is thus enabled at once to discover the true basses to the scale, and the harmony subsequently arising from them will be still better appreciated when he arrives at the harmoni ration of melodies.

The second fundamental bass is called the *dominant*. It is the same as the fifth sound in the ascending scale, and may easily be found by repeating the chord of the tonic, as the last note of that chord (viz. the fifth) is always the dominant. Thus the chord of C is C, E, "AND" G. G is therefore the dominant to C.

Again, the chord of D is D, F#, "AND" A.

- Q. What is the dominant to D?—A.
- Q. Why? -- Because A is the last (or 5th) note of the chord of D.

And thus may be found the dominant to any key.*

The third fundamental bass is called the *subdominant*; it is the fourth note of the ascending scale, and may easily be discovered and recollected, as being a whole tone *under* the dominant.

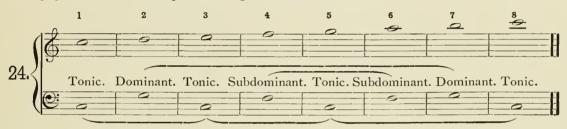
If the dominant be G, what is the subdominant? — F.

Why? - Because F is a whole tone below G, the dominant.

By way of exercise, the basses to other scales should now be found according to the same method as in Ex. 23.

The pupil having been thus shown how to find the proper fundamental basses to the scale, he shall now be taught which of the intervals of the scale are accompanied by the tonic, which by the dominant, and which by the subdominant.

First let him write a scale and add the fundamental basses as already directed; then let him remove the figures 8, 5, 3, and write in their places the figures from 1 to 8 over the different intervals of the scale, thus:



Having done so, he will discover

THE FIRST RULE OF HARMONIZING.

The 1st, 3rd, 5th, and 8th, of the scale are accompanied by the tonic.

The 2nd and 7th, " by the dominant.

The 4th and 6th, " by the subdominant.

To show the mode of exercising upon this rule, let us take, for instance, the scale of A.

Our first enquiry must be,

What are the names of the three fundamental basses accompanying this scale?

The key being A, the tonic must be the same, A.

The chord of A is A, C#, and E; the dominant therefore is E.

A whole tone below E is D; the subdominant therefore is D.

Having written the scale of A, we proceed to write the basses according to the above rule, reasoning thus:—

A the first of the scale, is accompanied by the tonic A.

B the second " by the dominant E.

C# the third " by the tonic A.

D the fourth " by the subdominant D.

E the fifth " by the tonic A

F# the sixth " by the subdominant D.

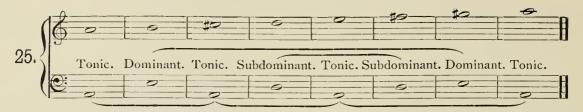
G# the seventh " by the dominant E.

A the eighth " by the tonic A.

By this process we have found the proper basses to the scale of A.

1 0 .0

^{*} The pupil will now see the motive for urging the necessity of pronouncing the chord as stated in Ex. 16, and of emphasizing the word and; for, had the common chord been pronounced in any other way, this result could not have been attained.



Pursuing this method, the pupil may find the fundamental basses to all the scales as far as six sharps and six flats; making use, in future, of what is called

THE SIGNATURE.

This is the *sign* by which the *key* is known, *i.e.*, the number of flats or sharps belonging to it, being placed at the commencement of each staff, instead of being written before each note.



It will be admitted, that without a certain degree of ready practice, it is in vain to expect much advancement. Unless the student of arithmetic have the multiplication table at his fingers' end, he will make no great progress; so it is precisely with respect to portions of the subject on which we have been treating. For instance, the common chord of any note, with the sharps or flats necessarily belonging to it, should be pronounced with as much readiness as a school-boy would answer the question, how many are four times four? How easy it is for him to impress upon his memory the sharps and flats, so as at all times, quickly, and unhesitatingly, to declare their number and order in any key! He needs but to extend his hand and he will behold the whole system; afterwards to forget them is utterly impossible. More of this by and by. We shall here endeavor to bring to the recollection of the pupil what he has already learned, and suggest the following mode of proposing questions which he is supposed to answer without hesitation.

- Q. Of how many sounds consists the diatonic scale? Seven, besides the 8th, which is a repetition of the Ist.
- Q. Where are the half tones found? Between the 3rd and 4th, and between the 7th and 8th.
- Q. How many sharps in the key of A? Three.
- Q. What notes are sharp? F#, C#, and G#.
- Q. What is the chord of E? E, G#, and B.
- Q. How many fundamental basses are there?
- Q. What are their names? --
- Q. Tell me the tonic, dominant, and subdominant, in the key of A? The tonic is A, the dominant E, and the subdominant D.
- Q. What notes of the scale are accompanied by the tonic? The 1st, 3rd, 5th, and 8th.
- Q. What by the dominant? The 2nd and 7th.
- Q. What by the subdominant? The 4th and 6th.

The above form of question and answer tends chiefly to exercise the memory.

The following mode brings into action the *reflective* faculties, it introduces a mental exercise which will be found highly interesting, and useful in after life for other purposes than the mere advancement in the science of music; it is calculated to stimulate the reasoning powers, compelling, as it were, the mind, before it arrives at a satisfactory conclusion, to pass through certain evolutions and reflections.

Supposing the key to be F, what is the bass to E?

(Reflection of the pupil.) - In the key of F, - E is the 7th of the scale. - The 7th of the scale is accompanied by the dominant. -

The dominant in the key of F is —. Here mentally repeat the chord of F, thus, F, A, "and" C. The last note of the chord is the dominant, therefore, C is the bass to E. This process should be observed at all times when the dominant is to be discovered.

Suppose the key is Eb, what is the bass to C?

(Reflection of the pupil.) — In the key of E^{b} — C is the 6th of the scale. — The 6th of the scale is accompanied by the subdominant — The subdominant is A^{b} — therefore A^{b} is the bass to C.

Suppose the key is B, what is the bass to C#?

(Reflection of the pupil.) — The key of B - C # is the 2nd of the scale — the 2nd of the scale is accompanied by the dominant — the dominant in the key of B is F # - therefore F # is the bass to C # -.

But what will be the bass to that C#, if we change the key to D?—A. Q. Why?———

Suppose we change the key to G, what then will be the bass to C #? — No bass can be found to C #, because C # is not one of the notes of the scale of G.

The pleasing and attractive form in which the pure elementary principles of harmony and composition are thus conveyed to the pupil, is calculated not only to accomplish the object proposed, but also materially to improve the understanding.

TO FIND THE FUNDAMENTAL BASSES TO MELODIES.

Hitherto we have taken only the ascending scale as a theme or melody, to which we have added the fundamental basses; we will now depart from the rigid observance of that plan, and select such intervals of a scale as shall, in their progression, form a pleasing and effective melody.

Let us suppose that the pupil is required to find the proper basses to the following:—



In order to accomplish this, it will be necessary to enter upon the following reflections:—

"The melody is in the key of C, and as E, the first note in the melody, is the 3rd of the scale, I shall write the figure 3 over that note. As D is the 2rd of the scale, I shall write the figure 2 over that note;" and so with all the rest, thus:—



The next step will be to call to mind the three fundamental basses of that key; thus,

The key is C, therefore

The tonic is C, which accompanies the 1st, 3rd, 5th, and 8th of the scale.

The dominant is G, " 2nd and 7th of the scale.

The subdominant is F, " 4th and 6th.

Let the pupil now write the fundamental basses according to this rule (as laid down in Ex. 25), and the melody thus accompanied will appear as in the following example:—



- Q. Why is D (the 2nd note) accompanied by G?—Because the 2nd of the scale is accompanied by the dominant, and the dominant is G.
 - Q. Why is C (the 3rd note) accompanied by C? Because the 1st of the scale is accompanied by the tonic, and the tonic is C
- Q. Why is A (the 10th note in the melody) accompanied by F? Because A is the 6th of the scale, and the 6th is accompanied by the subdominant.
- Q. Why is F (the 11th note) accompanied by F? Because F is the 4th of the scale, and the 4th is accompanied by the sub-deminant.

After having acquired, by sufficient practice, a readiness in distinguishing what interval of the scale each note is, the pupil may dispense with writing the figures over them, and at once write the bass under each note as he proceeds with the examination; as thus with the following Ex.

We perceive this melody is in the key of F: by the signature — one flat.

The first note, F, is the 8th of the scale, and requires the tonic F.

The following note, G, is the 2nd of the scale "the dominant C.

The next note, F, is the 8th of the scale

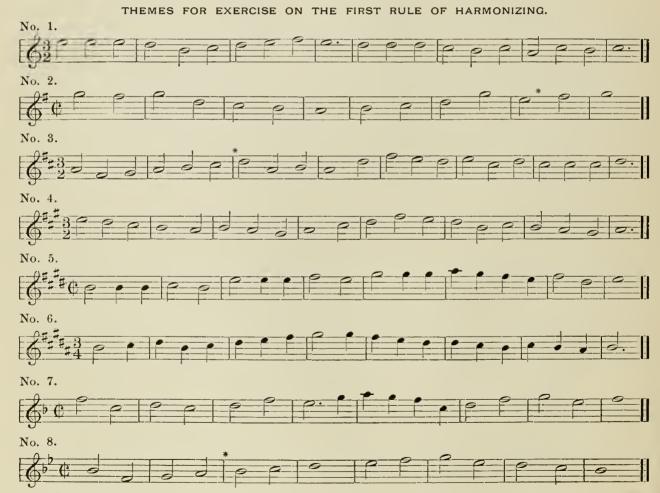
the tonic F.

E is the 7th of the scale

" the dominant C.



That the pupil may become perfectly familiar with this subject, and attain the utmost facility in writing the fundamental basses to any given melody, he is here presented with a variety of themes in different keys, which, having first served as exercises similar to the above, may afterwards be fully harmonized, when he has been made acquainted with the mode of adding the chords.



^{*} Progression of the melody from the 6th to the 7th of the scale, to be referred to in a future exercise.



After having employed all the above themes, should the pupil be desirous of further practice, it is only necessary to *change the signature* of any one, by which the intervals of the scale will be changed, whilst the notes themselves remain unchanged, and thus a new exercise is produced.



At II the theme is in the key of C. Let us suppose the pupil to have already accompanied it by its proper fundamental basses; viz., C, G, and F. If he afterwards changes the signature, as at III, the key will then be A; the fundamental basses of which are A, E, and D.

The signature being thus changed, the same melody will require other fundamental basses; for instance, the note E at II, is the *third* of the scale of C; C (the tonic) is therefore its proper bass. The *same* note E, however, at III, is the *fifth* of the scale of A, and requires A (the tonic) as its bass.

- Q. How is F (in the 4th bar) at II accompanied? A. By F the subdominant.
- Q. Why? A. Because F is the 4th of the scale of C.
- Q. How is F (in the 4th bar) at III accompanied? A. By the subdominant D.
- Q. Why? A. Because F in this example is the 6th of the scale of A.

It has been stated (page 10) that the melody, by means of the figures 8, 5, 3, points out the way by which we discover the fundamental basses, and that, in return, the fundamental basses will point out the harmony to the melody.

To exemplify this, we shall again resume the *diatonic scale*, as it exhibits, in a prominent degree, the harmony in a *connected* and *combined* form.

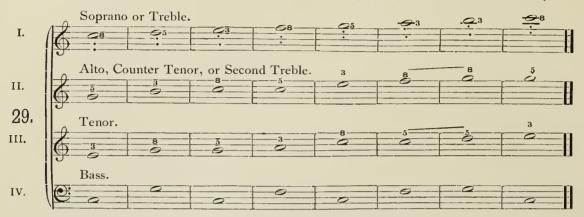
The scale having been written with its fundamental basses (as in Ex. 25), let the pupil add the remaining intervals of the chords which are indicated by those basses.



The first bass note is C; the chord of C is C, E, and G. Here C, the 8th, (one of the intervals of the chord) is already in the melody; we have therefore only to add the 3rd and 5th; these intervals should be written immediately under the note of the melody, and thus the chord will be complete; always taking care that the note which belongs to the melody be the highest note, and to write the other notes of the chord underneath, as near to it as possible.

To proceed; let the pupil point to the second bass G, and (having pronounced the chord G, B, and D) write first the note G, then B, and (as the D is already in the melody) merely point to the note and say "D." By a close observance of this method, all mistakes will be avoided.

If we examine the above Ex. 28, we shall perceive that, by adding to the melody the chords pointed out by the fundamental basses, a progression of chords is produced; as each of these chords consists of four notes, four rows of notes are thus produced: and, as each row forms a distinct melody, four melodies appear, each different in its progression, but all uniting together, forming a pleasing combination of harmony. Thus:—



In the foregoing Ex. the four distinct melodies, being written each upon a separate staff, is called a harmony in four parts.

The dots, as they appear in the upper staff at I, mark the places from which the notes composing the other parts at II and III have been taken.*

CONSECUTIVE FIFTHS AND EIGHTHS.

Let us return to Ex. 28, and particularly examine the *chain of connection* between the chords as marked by the curved lines.

It will be perceived that the G in the first chord forms a part of the second, and that the same note forms a part of the third chord also. The C in the third chord is the connecting link with the fourth, fifth, and sixth: but *no* connecting link is found between the sixth and seventh.

Here then (according to what has been observed concerning the necessary connection of chords) the sense of the sentence is, as it were, interrupted; and, on being played, the passage will produce a corresponding effect upon the ear.

That such a progression of harmony is *incorrect* and *ought to be avoided*, has been already noticed in the observations following Ex. 21.

At the 6th note of the scale in Ex. 29, we find (in the alto) an F which is marked with an 8, as being the eighth, or octave, to the bass note; and in the same part (the alto) the note immediately following is also an octave to the bass note. These are consecutive octaves.

At the 6th note of the scale, also, we find (in the tenor) a C, which is a fifth to the bass note; and in the same part, immediately following, is also a fifth to the bass note. These are consecutive fifths. †

* Supposing four persons to sing or play this progression of harmony: the first person would sing all the highest notes of the chords (which, in this example, form the scale of C). This we call the first part.

The second voice would take the range of notes next underneath.

The third voice would take the range of notes next above the bass.

And the fourth voice would take the bass, or lowest row.

The tenor part, as written in this example, is not intended to represent the real pitch of that voice; to do this, would require a different arrangement, calculated, at present, only to puzzle the learner and obscure the subject. For the same reason also, the peculiar clef is not introduced. If this part is played or sung an octave lower, all will be right.

† As a matter of course, an 8th and a 5th may be used in every chord; but the same interval ought not to appear twice in the same part in immediate succession.

TO PREVENT CONSECUTIVE OCTAVES.

In Ex. 30, at I, are consecutive octaves. Let the note which is an *octave* in the *first* chord be *continued* in the *second* chord, as at II, and that note will then become a 7th: thus consecutive octaves are avoided.

Why the 7th may thus be allowed to be heard in the second chord at II, shall be explained presently.



TO PREVENT CONSECUTIVE FIFTHS.

Observe this simple rule — whenever the fundamental bass ascends one degree, the 5th of that bass must not be allowed to ascend to the 5th of the following bass, as at III; but must descend one degree, as at IV. Thus the C, being the 5th of the bass F, having descended on the bass G (with which it now forms a third), the consecutive 5ths are prevented; but as we have already a 3rd in the principal melody, it becomes necessary that we should ascend again to the nearest note of the chord, viz.; the 5th, as at V.

Consecutive 5ths and 8ths* are both avoided at VI, where the harmony proceeds to a close; the 7th descends to the 3rd of the last chord (the tonic), whilst the 5th descends to the 8th.

On this subject we will say no more at present; indeed, it would be rather injurious than otherwise to enter more minutely into it here.

The student is recommended to reflect upon what has hitherto been said; and, by exercising himself on subjects in which consecutive 5ths and 8ths arise, he will not only impress this matter upon his mind, but acquire a facility in writing which will be found exceedingly useful in his future studies. The three last notes of any scale will answer this purpose, as the fundamental bass there ascends one degree.

Let him here add the alto and tenor (as in Ex. 29) to the themes which he has accompanied with fundamental basses only, and prevent the consecutive 5ths and 8ths, as directed above.

To dwell a little longer upon the delightful simplicity of the first steps in this science, we will, for a little while, postpone the subject of the dominant 7th, to point out the diversified effects to be produced by different methods of playing the same chord, which, if occasionally introduced in subsequent exercises, will render them more amusing, as well as instructive.

DIVERSIFICATION OF THE COMMON CHORD.

In a word of three syllables, each syllable is separately pronounced; yet it is still only one word. In a similar manner, each of the three notes of a common chord may be separately sounded, without in the least altering the nature of the chord.



As the common chord consists of three intervals, it may be varied or diversified in six different groups, by employing the figures which represent the notes, in this order: 8, 5, 3, 8, 5.

To form the first group, take the first three figures, commencing at 8 (as below at α .)

For the second group, take the three figures commencing at 5 (as at b.)

And for the third group, take the last three figures, commencing at 3 (as at c.)

a	8	5	3
E.	5	3	8
c.	3	8	5

^{*} It may be observed, that these objectionable progressions will occur wherever the fundamental bass and principal melody ascend together one degree.

For the next three groups, reverse the above order; beginning at the last figure (5), and proceeding from right to left; then commencing at the 8, and lastly at the 3.

In this manner we will proceed to diversify the chord of C, writing on an under staff the fundamental bass, and, on an upper staff, the six diversifications; the same process serving for each of the three positions.

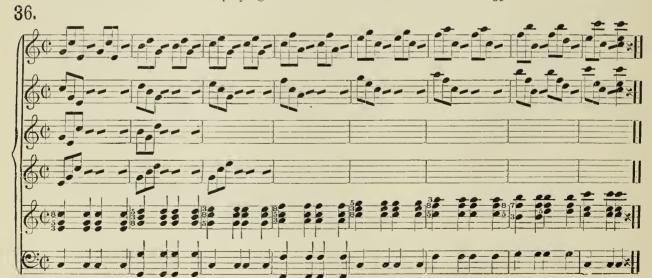


When a scale, or any other melody, has been harmonized, the chords may be thus diversified, selecting some one variation or *group* of notes as a *model*, and continuing the *same* through all the chords of the exercise.*

The following is a melody in four parts, to which is added an accompaniment, taking for the model of diversification, the lowest, the middle, and then the highest note of each chord.



The harmonized scale of C, employing the different diversifications, as in Ex. 35.



- * This will be found to be also a very useful exercise for young pianoforte players.
- † This is a mark of abbreviation, denoting that the preceding group of notes is to be repeated.
- a Consecutive 5ths and 8ths avoided.

Other scales and melodies may now be taken to extend this practice, by which the student will thus early acquire ideas, as well as a facility in varying his exercises.

PRELIMINARY OBSERVATIONS ON THE CHORD OF THE DOMINANT SEVENTH.

Let it be observed that our harmonies at first consisted entirely of common chords, *i. e.*, chords composed only of the intervals of the 3rd, 5th, and 8th; until (in avoiding consecutive octaves) we introduced a *new* interval, viz.; the 7th, which (as its name implies) is the 7th note *above* the bass.*

This 7th we call the *dominant* 7th; because, whenever it is introduced into a chord, that chord immediately becomes a *dominant chord*, and leads the ear to expect the tonic.†

It is also called the fundamental 7th, for a reason which will be explained hereafter. ‡

It is likewise called the added 7th; because it may be added to any common chord. For instance, in Ex. 30, VI, to the chord of G we have added the fundamental 7th, F, which 7th is a whole tone below the 8th. This common chord of G, by the addition of this 7th, becomes a dominant chord, and proceeds to the chord of its tonic, C.

N.B.—It is in this progression of the chord of the dominant to its tonic, that *each* interval has its *particular course* appointed, which is called *its resolution*: a satisfactory explanation of which will be afforded in its proper place.

FIGURING THE BASS.

It is stated above that the interval of the fundamental 7th may be added to any common chord; whenever this addition is made, it is usual to place the figure 7 over or under the bass of that chord (see Ex. 37 a), and this is called *figuring the bass*.

Every bass note is supposed to be always accompanied by its common chord, according to the signature; therefore it is not necessary to figure the bass, except when some *addition* is made to that chord, or some *alteration* is required, such as any interval of the chord requiring a sharp, flat, or natural. Thus, at Ex. 37 α , because the fundamental 7th to C is B7, we have placed a flat before the 7; and, in the same Ex., at δ , because the 5th requires to be made flat, we place the figure 5 over the bass, with a *flat* before it.

But when the third of the chord requires a flat, then a flat alone, without a figure, is sufficient; it being understood among musicians that a *flat*, *sharp*, or *natural* (without a figure) placed over a bass note, shall always be considered as applying to the third of the chord. (See the sharp alone in Ex. 38.)



- * Observe, this 7th is not the 7th of the scale; it is a whole tone below the 8ve of its bass.
- † See philosophical explanation, Ex. 63.
- ‡ See Ex. 67, bar 1, last chord. It is sometimes called the flat 7th, in contra-distinction to the 7th of the scale, which is a sharp 7th. § To the preceptor. A major chord, of course.

It may be asked, "Why is a bass figured at all?" The answer is, "That a figured bass represents, in an abbreviated form, those chords which constitute a musical composition." This is, in fact, THOROUGH BASS. The thorough bass player is required to play the chords thus represented by figures, as if they were actually printed, as they are in the above example, from which, if the pupil will remove the treble staff, and play the chords from the figures alone, he will be a thorough bass player. Perhaps he may wonder at this, so little having been said upon the subject; yet the little that has already been said may be considered as containing all the elementary principles of thorough bass.

CHORD OF THE FUNDAMENTAL OR DOMINANT SEVENTH AND ITS RESOLUTIONS.

It has been shown (Ex. 37 and 38) that the interval of the fundamental 7th may be added to any common chord.

When this addition is made, the chord becomes a dominant chord, and a power is communicated to it, by the addition of that interval, which almost irresistibly propels the harmony towards the tonic.

This impulse towards the tonic arises principally, if not altogether, from the effect produced by the 3rd and the 7th of the dominant chord when heard together; the former (viz., the 3rd) having a tendency to ascend a half tone to the Sve of the tonic; while the latter (the 7th) has an equal tendency to descend a half* tone to the 3rd of the tonic.

RESOLUTION OF THE 3RD AND 7TH OF THE DOMINANT.



These two intervals exercising so powerful an influence over its progression, the chord of the dominant or fundamental 7th may justly be viewed as the main-spring of the whole machinery of harmony—it governs and directs all—the name of the dominant is, therefore, given to it with great propriety.

After what has been said, it may be considered as a law, that the several intervals of this chord, which is called the Resolution of the Dominant 7th, should proceed thus †: -

The bass . . . to ascend a 4th, or descend a 5th to its tonic.

The 3rd of the chord to ascend a half tone . . . to the 8th of the tonic. (a)

(b) t

The 5th———— to descend one degree . . . to the 8th of the tonic. (d)

The 5th, may, however, be allowed sometimes to ascend to the 3rd of the tonic.

- We will not anticipate an observation which may be made at Ex. 70, b; and 72, etc., which is explained at Ex. 158.
- † The pupil is requested particularly to attend to what is here said, as very frequent reference will be made to it.
- t To the preceptor. When the key is major, of course.

Allowing, then, the intervals of the chord of the dominant to proceed as it appears itself to *dictate*, we shall find the succeeding chord will always be its tonic, as at f, in the preceding Ex*.

RESOLUTION OF THE CHORD OF THE DOMINANT SEVENTH IN ITS VARIOUS POSITIONS.



In resolving the dominant chord, let the pupil first dispose of its 3rd, which must ascend a half tone, and keep in mind that the note to which this 3rd proceeds will be the 8ve of the tonic; then resolve the 7th, next the 8ve, and last of all the 5th.

As it is of essential importance that one should be very well exercised in the *use* of this *fundamental 7th* and its *resolution*, we will commence a course of exercises calculated to bring into *practical* operation what has been said in explanation of Ex. 40.

We shall begin with the chord of C, at bar 1, Ex. 42.

That chord, when heard, (being merely a common chord), produces no desire to proceed to any particular chord; we may proceed, if we please, to the chord of G (as at 2), or to any other chord, and return again to C (as at 3); the ear seems perfectly indifferent upon the subject.

The case, however, is greatly altered, when to that chord of C we add the 7th, B (as at 4). Then an immediate desire manifests itself to proceed to the chord of the tonic F. By these two *important intervals* of the dominant chord (the 7th and the 3rd) we are *now*, as it were, *compelled* to allow the harmony to proceed to the tonic at 5. The 3rd being determined to *ascend* a half tone, and the 7th to *descend*, whilst the 8th and the 5th of the chord are passively carried along to the place of their destination.

At 5, we see that the chord of the tonic F arises, as it were, spontaneously out of the resolution of the chord of the fundamental 7th at 4.

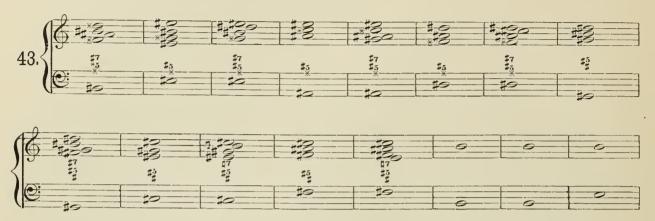
PRACTICAL APPLICATION OF THE RESOLUTION OF THE DOMINANT OR FUNDAMENTAL SEVENTH.



At 5, the ear would have come to a perfect state of rest; we might have ended the exercise there, but the 7th (Eb) having been added to the chord (at 6), it becomes a dominant, and the ear requires the harmony to proceed to the tonic Bb (as at 7), and thus we may extend the exercise by continuing this process through all the keys with single and double flats.

However difficult the above exercise may *seem* to the eye of the young student, let him rest assured that it is only so in appearance, and not in reality. The process is exceedingly simple, especially to one who has made himself acquainted with the flats and sharps by the easy method shown at page 4.

If the pupil writes a similar exercise (as in the following Ex. 43), commencing with B#, it will carry him through all the keys with single and double sharps and flats, ending in D > 7. This he is strongly recommended to do, as it will be found an excellent introduction to exercises in modulation.



In concluding the subject of the resolution of the fundamental 7th, we shall make the following additional remarks.

By the introduction of this 7th, the progression of harmony acquires a more decided character, and produces, in effect, a certain degree of light and shade, of which a progression of mere common chords is incapable; thus, the necessity of perfectly understanding how to employ that chord to advantage, cannot be too strongly enforced. To multiply examples is unnecessary; but it is strongly recommended to the pupil, frequently to play the preceding exercise, with and without the 7th; by which means the ear will be early accustomed to compare and judge of the difference of effect.

HARMONY IN FOUR PARTS.

An instance of this has already appeared in Ex. 29, which is generally called *writing in score*. Each part being written upon a separate staff, its progression is more clearly distinguishable than when all the harmonies are compressed into two staves, as they are always written for the pianoforte.

In our remarks on Ex. 29, we partially entered upon the subject of writing in four parts, taking the scale for a theme. The pupil was afterwards (page 17) directed to add the alto and tenor to those themes which he had accompanied with fundamental basses, and to prevent the consecutive 5ths and 8ths as shown in Ex. 30. We will now proceed to harmonize a melody, in four parts, in order to make him acquainted with another method of preventing consecutive 5ths and 8ths.



The consecutive 5ths and 8ths appear in example 46, in the 7th bar, where the note E[†] in the alto (instead of being changed into a 7th, by the ascending of the fundamental bass) descends to the 5th of the succeeding dominant chord; while, at the same time, the 5th (B[†]) in the tenor ascends to the 7th. Thus, the alto and tenor cross each other, or, in other words, interchange places; and the rule, that "the same interval ought not to appear again in the same part in immediate succession," has been observed.

This, as well as the preceding method of preventing consecutive 5ths and 8ths, may be employed at pleasure.

The pupil may now, by way of exercise, re-harmonize in score some of the themes already given; not forgetting to mark each interval of every chord with its proper figure; let him *especially* keep in mind, that the harmony which has been employed to accompany these themes has, up to the present time, consisted of *common chords*, only except at the 7th of the scale, to prevent consecutive Sves.

As the importance of the chord of the dominant 7th, together with its decided character, and the vast influence it exerts in guiding the harmony, dispensing light, shade, and energy through the whole, have already been fully explained, it shall now be shown *how* and *where* this new and powerful auxiliary may be introduced in a harmony of four parts.

The question first naturally arises, to which of the chords of the three fundamental basses may we add it, and where shall we find room for this new interval?

Answer. — We can introduce it in *any* chord, *provided* the chord immediately following be its tonic. Thus, then, arises the rule,

"WHEN THE BASS PROCEEDS FROM DOMINANT TO TONIC, WE MAY INTRODUCE THE SEVENTH UPON THE DOMINANT."

Let us now examine by this rule Ex. 46, and discover which of the basses will admit of a 7th.

- Q. Can we introduce a 7th on the first note, Bh?—A. No; because Bh is not the dominant to F, which immediately follows
 - Q. Can we introduce a 7th on the second note, F?—A. Yes; because F is dominant to the note, Bb, which follows.
 - Q. Can we have a 7th on Bb, the third note?—A. Yes; because Bb is dominant to Eb, the following note*.

Thus let the pupil proceed through the whole example, writing the figure 7 over such basses as will admit of a 7th being added.

Let us now inquire in which of the four parts must the 7th be written?

Ans. — " In that part where its resolution is found."

it.

As the dominant 7th resolves into the 3rd of the tonic which immediately follows, we have only to look forward to that chord, and "wherever in the four parts its 3rd is written, in that same part write the 7th." Thus, in the following Example 47 (bar 3), the 7th is written in the tenor part. — Why? Because the 3rd of the following chord is there.

In the last bar but one, the 7th has been introduced in the tenor. Why? — Because the 3rd of the following chord is there.



In adding the 7th to any chord, it is necessary to remark, that, as the harmony consists of only four

^{*}We are not here speaking of the dominant belonging to the key only; but the dominant of any bass.

parts, one of the parts must be expunged to make room for the 7th. Thus, in the above example (bar 3, tenor), the 5th has been expunged, as marked by a dot, the 7th, F‡, being introduced in its place. It will, therefore, appear that whatever interval happens to be found immediately preceding the 3rd of the tonic chord, must be taken away to make room for the 7th.

- Q. Upon the bass D (bar 2) can we have a 7th? Yes.
- Q. Why? Because D is the dominant to the note G, which follows it.
- Q. In which part should this 7th be introduced? In the soprano.
- Q. Why?—Because the third of the following chord is there. This is true; but if we were to introduce the 7th there, we should be obliged (in conformity with the rule just given) to expunge the note A (which occupies that part) and write C, the 7th, in its place; and in doing so, we should alter the original progression of the scale or melody given as an exercise. Let us suppose that we are not permitted to do this. In such a case, we are necessitated to omit the 7th altogether; although, from the progression of the bass, it might be admitted.

In bar 5, a similar circumstance occurs; the 3rd (E) of the following chord (bar 6) being in the principal melody, we cannot introduce the 7th.

The pupil should now exercise upon scales in other keys, avoiding consecutive 5ths and 8ths by the two different methods, and always introducing the 7th wherever the progression of the bass and the melody will admit of it. Melodies which have already been harmonized with common chords only may now answer this purpose, the pupil proceeding always according to the routine already pointed out, thus:—

- 1st. Write the basses.
- 2nd. The common chords.
- 3rd. Prevent consecutive 5ths and 8ths.
- 4th. Discover the dominants proceeding to their tonics, and mark them with a 7.
- 5th. Introduce the 7ths.

EXAMPLE OF A MELODY HARMONIZED IN FOUR PARTS, WITH THE FUNDAMENTAL SEVENTHS INTRODUCED.



The pupil is recommended carefully to examine the above example; first, to make his own remarks on what has taken place at every bar; and afterwards to compare them with the following observations.

Bar 1. — Though the *first* bass note *is* the dominant to the second, still the 7th is not introduced, because the 3rd of the following chord is in the principal melody. Moreover, it is not usual to commence with the chord of the 7th, although there is no absolute law against it.* In this first bar, also, where the bass ascends one degree, the consecutive 5ths and 8ths are prevented by the second method, that is, by the crossing of the parts.

Bar 2.—In the alto, appear two 8ths in immediate succession. How can this be allowed? Because that part (the alto) and the bass proceed by contrary motion.†

Bar 5.—There appear to be two chords over *one* bass note; but these are merely the *same chord* in two positions.

Bar 7. — The figure 7 is placed over the first note only of the bass. It must be understood that a line

- * See Ex. 54.
- † This may be considered as a general rule, "When one part ascends, while another descends, they proceed by contrary motion."

drawn from any figure and extended over other bass notes, signifies that the interval which that figure represents shall be continued in all the chords over which the line is extended.

Now let the pupil pause and reflect on the progress which he has hitherto made, and on the effect he was enabled to produce by the application of the materials with which he has already been furnished; and as this will be productive of the best effects, and cannot be too early or too frequently put into practice, let us take a retrospective view, commencing with Ex. 20-21, where

Melody and Harmony having been described and illustrated, we proceeded to the discovery of the fundamental basses (Examples 22 and 23), by which we found that, in Example 24,

The 3rd, 5th, and 8th of the scale were accompanied by the tonic,

The 2nd and 7th by the dominant,

The 4th and 6th by the subdominant,

which we called the "first rule of harmonizing." By this rule we were enabled to write the fundamental basses to a scale or melody (Ex. 26, 27). The chords were then added (Ex. 28), producing a harmony of four parts, subsequently appearing in score in Ex. 29.

In preventing consecutive 8ths, we were introduced to a new interval (the fundamental 7th, Ex. 30), which was afterwards interwoven, and variously employed in producing new effects and in avoiding the monotony which, from a too frequent succession of common chords, would eventually arise.

Having now availed ourselves of all the variations of effects resulting from the application of the three fundamental basses, according to *the first rule*, let us see whether we cannot produce a still greater variety, by some change in their application.

We shall find that an opportunity presents itself, arising from the introduction of the fundamental 7th (as in Ex. 48).

On examination, it will be perceived that the 4th of a scale is, in fact, the fundamental 7th of the dominant of that scale; consequently we may accompany the fourth of the scale by the dominant, as its bass, provided that the fourth, on this occasion, in its progression, descends one degree.* This we shall call

THE SECOND RULE OF HARMONIZING.

" When the fourth of the scale descends one degree, it may be accompanied by the dominant." †



At a, the 4th is accompanied by the subdominant, as heretofore; at b, by the dominant.

Here we see that, by a *new application* of one of these fundamental basses (viz., the dominant), a new effect is produced, not only as it respects the interval of the 4th *itself*, when heard in conjunction with the intervals of the dominant chord, but also as regards the *new* progression of the alto and tenor. Compare I. with IV., in the following example.



- * Why this proviso is necessary, will be evident when we consider the progression of the 7th, which, in its resolution, is required to descend one degree.
 - † Instead of the subdominant.

At I, the 4th of the scale (F) descends one degree to E, and we have accompanied it by the dominant G. When the 4th of the scale in descending is thus accompanied, let the 3rd of that chord (the dominant) be written in the alto, and the 8ve in the tenor, as at I, otherwise the 3rd of the chord will be excluded at II, or the concluding chord will want its 5th, as at III. In both these cases one of the chords would be incomplete, which should be avoided. It need scarcely be stated that, when the 4th of the scale ascends, it cannot be accompanied by the dominant, because its progression would be contrary to the resolution of the 7th.*

OBSERVATIONS.

Although the primary object in introducing the *second rule* is to produce variety, and open a more extensive field for the employment of one of the fundamental basses, yet, another and important object is also attained by the employment of that rule.

It is a general principle in harmonizing an air, that the key of that air should be established and impressed upon the ear as soon as possible; this can be effected only by the introduction of the dominant. The second rule affords us this opportunity. See Ex. 51 α , where, the 4th of the scale descending, we have accompanied it by the dominant, by which the key becomes established; but at b, where the 4th again descends, we have accompanied it by the subdominant; the necessity of establishing the key here no longer exists, and it would have exhibited a want of taste as well as judgment, had we again accompanied it by the dominant, as will be evident if we examine the harmony at a, and compare it with that at b.

These few observations, if carefully attended to, will suffice for the present to show how the pupil may employ the second rule with propriety and effect.



When the fourth of the scale is repeated and then descends, it is good to employ both the fundamental basses—first the subdominant, and then the dominant. (See the following Ex. a). But let the pupil be careful he does not employ the dominant first and then the subdominant; for in that case the fundamental seventh could not be resolved. (See b.)



* An apparent exception to this rule shall be explained hereafter.

It is not usual to commence a composition with the chord of the seventh (although there is no absolute law against it). Should we, however, be inclined at any time to introduce the fundamental seventh upon the *first chord* of a melody, it will be better to let the chord be first heard as a common chord, and introduce the seventh only on the latter part of it (as in the tenor at c).

In order clearly to ascertain the variety which has been produced simply by the introduction of the second rule, the pupil should harmonize the fourth of the scale descending by both rules alternately, noticing particularly the change which takes place in the inner parts.



The intelligent student must, ere this, have observed that when only the *first* rule of harmonizing was employed, no judgment was necessary in selecting the fundamental basses, and finding the harmonies: the question was simply—"What part of the scale is such a note, and what is its fundamental bass?"

But, by the introduction of the second rule, the case is very different; because, as the fourth of the scale in *descending* has now the advantage of being accompanied by *two basses*, and as a choice is thus presented in selecting either one or the other, the *judgment* of the pupil is required to be exercised in this selection.

Hitherto, as far as regards harmonizing airs, he has been, as it were, in *leading strings*; now he is beginning, it may be said, to walk alone; and this is the very first step towards the cultivation of his judgment, let him exercise it in harmonizing the preceding melodies—remembering that, even when the fourth of the scale does descend one degree, he is not obliged to accompany it by the dominant; this is left entirely to his own judgment: but when it ascends, he is obliged to accompany it by the subdominant only.§

We are now to suppose the Pupil to have harmonized the preceding melodies according to the second rule—that he has played them—examined the different effects—and attained a certain degree of facility in judging correctly and readily as to the best mode of employing the three fundamental basses. Thus

^{*} The figures placed over the notes point out the rules to be employed; 1-2, thus placed over a note, denotes that both rules are to be employed.

[†] See Ex. 57 and remarks; also, page 26.

[‡] See Ex. 52 (a).

[§] See Retrospect, page 36, and Ex. 58 D, Bar 1.

prepared, we shall proceed to show him how, by a new and varied application of another of the three fundamental basses, the harmony may be still more enriched and improved, and a greater variety of effect produced.

In the preceding examples, the *fourth* of the scale came under consideration; in the following, the *eighth* of the scale shall be our object. We are aware that, according to the *first* rule, the *eighth* of the scale is accompanied by the *tonic*; but it shall now be shown how *that* interval (under certain circumstances) may be accompanied by the *subdominant* instead of the *tonic*.

This we shall call

THE THIRD RULE OF HARMONIZING.

"When the eighth of the scale is repeated, it may be accompanied by the subdominant (instead of the tonic)."



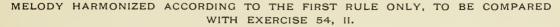
At a, in the above example, the chord of C being *repeated* five times, a very *monotonous* effect is produced by the application of the *first* rule *only*. This, however, is avoided by the employment of the first and third rules alternately (as at b, c).

Although this rule has reference *particularly* to the *eighth* of the scale when *repeated*, yet it *may* occasionally be employed where that interval is *not repeated* (as at d and e); but, as the effect produced at d is rather harsh and unsatisfactory, the rule should, on such occasions, be used sparingly. The effect, however, at e is good.

What was stated respecting the effect produced upon the *alto* and *tenor* by the application of the *second* rule (see Ex. 50), may be applied here also to the *third* rule; by the latter, it will be perceived, we are enabled still more frequently and *effectively* to avail ourselves of the powerful influence of the fundamental seventh, by which the *whole texture* of the harmony becomes more firmly connected and amalgamated, and also, (as has been stated before) the inner parts become in their progression more flowing and melodious.

All this will be evident, if the pupil play and then carefully examine the preceding example, comparing the *monotonous* effect produced by the *first* rule at a, with the *diversity* of effect which arises out of the employment of the *third* rule at b and c. However, he must not rest here; let him also carefully examine and compare the *variety of effect* produced in the progression of the melodies of the alto and tenor by the different application of the third rule at b and c.

The pupil is most particularly recommended not only to notice well what has been said, but also (in order that the value of these rules may be still more permanently impressed upon his mind and thus practically established) to harmonize a melody by the first rule only (see Ex. 54, I), and then harmonize the same melody by the three rules (as in Ex. 54, II); and, if he carefully examine and compare them, he will be surprised to find that all the variety of effect hitherto produced has arisen solely out of the different application of two of the three fundamental basses only.





Nothing, perhaps, is better calculated to impress upon the mind of the pupil the value and importance of these rules than the preceding examples, which he is strongly recommended to examine and investigate with respect to the effects which they produce. In order that he may derive all the advantages which the examples thus afford, let him not pass through this examination hastily; on the contrary, let him compare the two, bar by bar; for instance, let him take the first bar of I., and compare it with the first bar at II. Play each of these bars and mark the difference of effect produced. Having done so, let him play and compare the alto and tenor of each example, observing the effect of each. The advantage resulting to the pupil from this process is incalculable, because it will (even at this early stage) make him acquainted with the practical part of the harmony, without which all his theoretical knowledge is useless.*

We shall now proceed to explain Ex. 54, II.

In bar one, the seventh is introduced in *the alto*. Why? Because its resolution is in that part: and it is thus introduced only on the latter part of the chord, in order that the harmony may commence with the common chord of the tonic. †

In bar two, the seventh is introduced in the tenor. Why?

three					soprano.
four					tenor.
five					alto.
six					tenor.

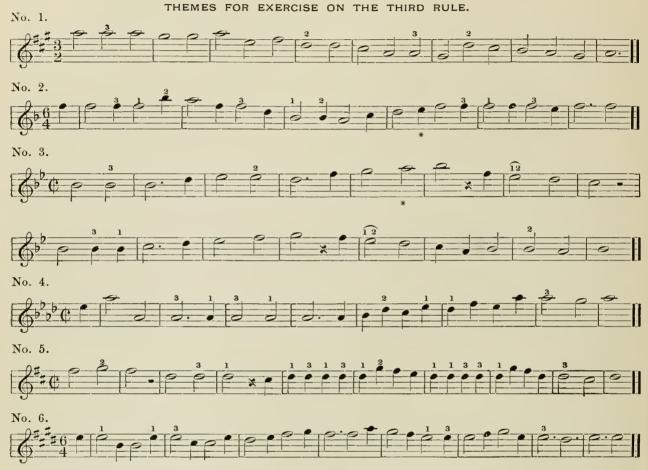
N.B. Where one dominant chord is immediately succeeded by another, the third of the first dominant need not ascend, but may descend and become the seventh of the following dominant chord, as in bars 4 and 5 alto. This may be considered as a general rule. ‡

^{*} See Retrospect, pages 34 to 36.

[†] See also Ex. 52 c, and remarks, page 27.

[†] Observe how a similar progression is treated, Ex. 56, bar 5, where the 3rd of the dominant in the alto has ascended first to the octave, and afterwards descended on the same bass to the 7th; also, bar 10 in the tenor, same Ex.

The following melodies, although written expressly as exercises for the *third* rule, are so constructed that the *second* rule can be introduced with equal advantage. They should be harmonized by the pupil in a variety of ways; and, in doing so, he may be considered as having entered upon the *second step* in the improvement of his judgment with respect to effect.



We shall now explain

THE FOURTH RULE OF HARMONIZING.

" The fifth of the scale may be accompanied by the dominant."

Hitherto the *fifth* of the scale has been accompanied by the *tonic* only; but, as by the *fourth rule* (as shall be shown presently) we are enabled to accompany *that* interval with two basses, a still greater variety will be thus introduced into the harmony; chiefly so, when the fifth of the scale is frequently repeated, or heard in notes of long duration.

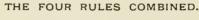
In the following example, at bar I, the fifth (D) being four times repeated, we have, upon the second D, introduced the fourth rule; and thus the monotony, which by the employment of the first rule only would have been unavoidable, is here prevented; a great similarity appears to exist, in this particular, between the third rule (Ex. 53) and the fourth; as will be perceived, if we compare bar I in the present example with bar 3; in which latter, the octave being five times repeated, the third rule has been opportunely introduced to prevent monotony, similar to the fourth rule at bar I.

At 5, is shown how the fourth rule may be employed, although the fifth is not repeated.

^{*} See consecutive 5th and 8th, Ex. 46.



Let the pupil now carefully examine the following exercise, in which the preceding four rules will be found combined; and, in order that he may discover, without any difficulty, how and where each rule has been introduced, figures are placed over the notes (as in the Themes), pointing out the particular rule that has been employed.





At bars 1, 9, and 10, E (the fifth) being a note of long duration, we have employed the first and fourth rules alternately; thus monotony is prevented and variety introduced.

N.B. When the fourth or the third rule is employed, the seventh will be found in the alto.

Observe the progression of the inner parts, arising out of the application of this rule.

At bar 3, the *fourth* of the scale (Db), in descending, is enriched by both the subdominant and dominant harmonies. Had that interval been accompanied by the first rule *alone*, we should have deprived ourselves, not only of these harmonies, but also of that very important interval, the fundamental seventh.

In bar 5, the eighth, being repeated, has been accompanied alternately by the *first* and *third* rule. By the employment of the latter, the seventh appears in the *alto*. Examine bars 6 and 7, and observe the different effects produced by the same progression of intervals—by the *first* rule at 6, and by the *second* rule at 7. Which of these would the pupil prefer?

It will be exceedingly improving to follow up what has been here said, by harmonizing the above (or any other melody) in a variety of ways. For instance: let it be harmonized first by the first rule only; and at that stage compare the progression of the harmony (especially of the inner parts) with the above example.* Afterwards, harmonize it again by the second rule, comparing that harmony with the former. Then by the third rule, and, lastly, by the fourth rule; the pupil still continuing his observations and remarks as he proceeds. Then, and perhaps not until then, will he have learned what these few simple rules are capable of accomplishing.†



Enough has now been said upon this subject to guide the choice on all future occasions: we shall only add, that, in harmonizing a melody, *each* interval should be carefully examined, in order to discover whether it admits of *two* basses; and, if so, which of them will be most effective.

The following specimen may probably suffice to show the process of reasoning in the selection of the basses.



Let us suppose that, in the course of a melody, the fourth of the scale were to appear as in the above example. How ought we to accompany it?

The first F (bar 1) we would accompany by the second rule (the dominant), because the second F (bar 2) ascends, and therefore we are compelled to accompany it by the subdominant; it is evident, therefore, that, had we accompanied the first F by the subdominant, we should have deprived ourselves of the variety produced by the harmony of the dominant, which would have been an error in judgment, inasmuch as neither of the basses is absolutely wrong.

Would it be permitted to accompany the descending fourth at a by the first rule?

No; because it would produce consecutive eighths with the preceding chord; therefore, the fourth can here be accompanied only according to the second rule; viz., by the dominant.

* See consecutive 5th and 8th, Ex. 46. How prevented.

CHARACTER OF THE FOUR PARTS IN HARMONY.

This will show us that, while only the *first* rule for harmonizing a melody was known, little reflection was necessary to accomplish the end; but now we are led to consider the consequences of every step we take: the melody must be carefully examined, a certain degree of foresight and circumspection employed in forming the plan for the succession of the several basses, and, finally, the judgment is called on for the selection of those which are calculated to produce the best effect.

One reflection is here very satisfactory; viz., that, though it is possible we may err in mere matters of *taste*, we are sure, by attending to the rules, to be always *grammatically* correct, and that a moderate share of care in the application of those rules already given will produce results which could be little anticipated by those who have studied harmony by any other process.

DEFINITION OF THE PECULIAR CHARACTER OF THE FOUR MELODIES IN A PROGRESSION OF HARMONY.

In order clearly to comprehend this subject, it is necessary again strongly to impress upon the mind of the pupil the importance of the chord of the fundamental seventh, and the almost irresistible influence which it exercises over the whole body of harmony. That chord not only invigorates and gives life to the whole, but each interval of the chord, having its own peculiar progression,* communicates to the melody of which it forms a part, a character also peculiarly its own.

The soprano progression is produced, and distinguished from the rest, by the two intervals of the dominant chord which proceed *direct* to the octave of the succeeding tonic; viz., the third ascending half a tone, or the 5th descending. (Ex. 58, a.)

The alto progression is distinguished by the interval which remains in its place and becomes a fifth in the succeeding tonic chord. (b.)

The tenor progression is distinguished by the interval which proceeds direct to the chord of the tonic, whether descending from the seventh, or ascending from the fifth. (c.)

The bass \dagger progression is that interval which ascends a fourth, or descends a fifth; or, in other words, that which proceeds directly from dominant to tonic. (d.)



The pupil is here assured, that however *unimportant* the preceding matter may appear, it is nevertheless of very great importance. Let him keep in mind, therefore, what has been just said, and he will be enabled to enter still more fully into the nature and spirit of the preceding rules, and the principle on which they are founded. With *some* of the advantages resulting from their application in harmony he is already familiar; but how comprehensive they are in their object, and how productive (when judiciously applied) in effect, can only be discovered and appreciated by those who *carefully study and practise them*.

It will be found that, in harmonizing a melody by the *first rule*, each of the four parts retains its peculiar character throughout. (See Ex. 48, where the seventh is always found in the *tenor*.)

From this it is evident that, had we continued to harmonize by the first rule only, monotony must have

^{*} Any deviation or departure from the established and settled progression of each of its intervals can only be considered as a license, employed to produce some peculiar effect. See false cadences, suspended cadences, equivocal modulation, and deceptive modulation.

t The fundamental bass, of course.

been the result.* By the application of the other rules, however, a variety of effect is produced by an *interchange of character* among the four parts.

This peculiar *interchange* of character may, perhaps, be more clearly distinguished by directing the attention especially to that part wherein the seventh of the dominant is found.

In Ex. 50 I.,

The *tenor* character (the seventh descending into the third of the tonic) is in the *soprano* part. The *soprano* character (the third ascending into the octave) is in the *alto* part. The *alto* character (the eighth remaining in its place) is in the *tenor* part. The *bass* retains its own character.

N.B. The above interchange of the parts has been effected by the second rule.

We may have occasion hereafter to observe more at large on this characteristic distinction of the four parts; at present, we shall content ourselves by giving the following table, to show the various interchanges which are effected by the application of the four rules.

When harmonizing by the first rule, the 7th will be in the tenor.

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When harmonizing by the second rule, the 7th will be in the soprano.

† 8th " " " alto. (Ex. 47, 48.)

When harmonizing by the second rule, the 7th will be in the soprano.

3rd " " " alto.

8th " " " tenor. (Ex. 51.)

When harmonizing by the third rule, the 7th will be in the alto.

8th " " " soprano.

3rd " " " tenor. (Ex. 54, II.)

When harmonizing by the fourth rule, the 7th will be in the alto.

8th " " " tenor. (Ex. 54, II.)

3rd " " " tenor. (Ex. 56.)
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From all that has been said upon this subject, it is quite evident that, without the aid of the fundamental seventh, we should have been without any light to guide us on our way through the mazes of harmony. Without the aid of the four rules for harmonizing, we should have remained ignorant of the variety which has been produced through their *instrumentality*; for, let it be remembered, without a single addition to the three original fundamental basses, and without having changed a *single note* of the melody, we have (merely by attending to the rules) been enabled to effect not only *new* combinations in harmony, but likewise *new progressions* in the *alto* and *tenor*, which (when we arrive at Inversions) shall be introduced into the bass also.

A Concise Retrospect of all the Four Rules in Harmonizing,

with a few precautionary hints for preventing improper progressions, which might occur by an injudicious and indiscriminate introduction of those rules on some occasions.

It has been stated elsewhere,‡ that, when only the first rule of harmonizing was employed, no judgment was necessary in selecting the fundamental basses: the pupil, at that stage, was (it may be said) not a *free agent*; for every note in the melody, according to *that* rule, had its specific bass appointed; from which he was not allowed to deviate in the slightest degree.

By the introduction of the *second rule*, however, his sphere of action became in some degree enlarged§: two basses, under certain circumstances, might then be employed to accompany the *same* interval of the melody; and as a *choice* was thus presented to him, he had to make a selection; and as the *proper* selection depended on his *own* judgment, so the employment of the *second rule* was the first step towards forming that judgment.

In illustration of this, we shall suppose the pupil—in his first effort to harmonize by these rules—to reason thus:—" Here is the 4th of the scale (for instance), the fundamental bass of which is the subdomi-

^{*} It is true that by inversion this monotony might be obviated; but we are not advanced yet so far.

[†] This admits of a slight exception; see Ex. 47, bar 2, where, the 5th being in the soprano, the 3rd is in the alto. See also Ex. 48, bar 1, where consecutive 5ths and 8ths have been prevented.

‡ See bottom of page 27.

§ See pages 25 to 27.

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nant.* "—He would then carefully examine the progression of that interval,—whether it ascended or descended one degree. If it ascended, then only one bass—no choice; but if it descended one degree—two basses—viz., subdominant and dominant.†—" Which of these shall I employ?"—(For let it be remembered that, although the fourth may descend one degree, he is not compelled to employ the dominant; that would counteract the very object contemplated.)

Suppose that the melody at I, in the following example, were presented to him to be harmonized. Probably he would reason thus, and say (pointing at bar I), "Here is the 4th of the scale; it descends one degree; I will accompany it by the second rule" (the dominant). (See II. bar I.)



Pointing at 2, he would say, "Here the 4th descends again; but I will now accompany it, for the sake of variety, by the *first rule* (the subdominant); and at 3 by *both* basses."

This, it is presumed, will suffice to show what may be effected by small means: viz., the employment of the second rule.

By the introduction of the *third rule*,[‡] the sphere of action — already enlarged by means of the second rule — became still more extended, and formed the second step towards the improvement of his judgment.

Finally — by the addition of the *fourth rule* § he was altogether emancipated and set at liberty from the trammels in which he was bound by the observance of the *first rule*.

Let the pupil, however, remember that in proportion as this liberty opens an extensive field for the exercise of his mental faculties, so, in the same proportion, will he be liable (unless caution be observed) to fail into error; for, to be acquainted with rules, to know when and where they can be employed, and (we shall add) even a knowledge of the variety of their effects, is not sufficient; care also must be taken, when they are employed, that the *purity* of the harmony be preserved — that no improper progressions (consecutive 5ths and 8ths) be allowed to make their appearance. To preserve this purity in the harmony, observe the following

PRECAUTIONARY HINTS RESPECTING THE EMPLOYMENT OF THE FOUR RULES.

We will commence with the third rule.

Let us suppose the pupil about to harmonize the following example 58 C. I. He would reason thus, saying—"This is the 8th; its proper fundamental bass, according to the first rule, is the tonic¶: but as the 8th is here repeated, I can accompany it by the subdominant. Is it proper to do so? for though the 8th is repeated, does it follow that I must necessarily accompany it by the subdominant? If I do, may it not effect the purity of the harmony? How shall I know?"

These are questions of no small import. The answer is: Examine carefully the progression of the melody; see whether the interval immediately following the 8th will (when accompanied by its proper bass) produce either a consecutive 5th or an 8th. Should this be the case, the first rule only must be EMPLOYED.

At I, in the following example, the 8th is repeated, and accompanied by the third rule; but, as that interval is followed immediately by E (the second of the scale, which requires to be accompanied by the

* Referring to the *first rule*, which must constantly be kept in mind, because the others emanate from it. See first rule of harmonizing, page 11. † See second rule, p. 25. † Page 28. § Page 30. | See page 28. ¶ Page 11

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dominant,) the employment of the third rule is here improper, because consecutive 5ths and 8ths are thus inevitably produced. Under these circumstances, the *first rule only* must be employed (as at II).



At III, the 8th is repeated, and accompanied by the third rule; but this note is immediately followed by A (the 5th of the scale), and as that interval requires the tonic, consecutive 5ths and 8ths are the result; therefore, the first rule only can be employed (as at IV). Let the pupil examine and make his own observations upon V, VI, VII.—Q. May the third rule be here employed with propriety?

HINTS RESPECTING THE EMPLOYMENT OF THE FOURTH RULE.

Looking at the following Ex. 58, D I, the pupil would say—"This is the 5th of the scale; its proper bass (by the first rule) is the tonic; but as the fifth of the scale is here repeated, I may accompany it by the dominant." (Whether we should do so, will depend upon the intervals which follow.) This fifth A is repeated; yet, in consequence of the interval which immediately follows, it would be highly improper to accompany it by the dominant; because, as G, the 4th (which here ascends) must be accompanied by the subdominant,* consecutive 5ths and 8ths would be the inevitable result.

The case is very different at II, where, the 4th having descended one degree (thus admitting the introduction of the second rule), the fourth rule may be legitimately employed upon the 5th of the scale.

At III, the *harmony* (though similar to that at I) is correct; because it proceeds by a motion contrary to that of the bass.



In conclusion, it may be well to observe, that the above hints, if carefully attended to by the pupil, will not only guard him against gross faults, into which young composers are liable to fall, but they will also add greatly to his *practical* knowledge as regards the introduction of these rules with the best effect: and further, the reflections and reasons which are here supposed to direct him in the choice of proper harmonies, although stated in a few words, contain the *germ* of many reflections which, by analogy, may be applied to other purposes besides music.

MAJOR AND MINOR.

It has been our object, from the commencement, to lead the mind gradually to the attainment of harmonizing a melody in four parts. We have therefore carefully avoided all matter which could in the least interfere with our object, or cause the slightest embarrassment.

The pupil may now be informed that every exercise in which he has hitherto been engaged was written in what is (technically) called "the *major* key," in contradistinction to that called "*minor*." But, before we proceed to the subject of the major and minor keys, it will be proper to explain the construction of

MAJOR AND MINOR CHORDS.*

These terms, major and minor, refer here to the third of the chord only, which is major or minor as it may contain a greater or less number of semitones.

All the chords hitherto written have been major, containing five semitones in the third, commencing with the key-note, and calling that one.



The *minor* chord contains in its third, *four* semitones only (b), which, as it has one semitone *less* than the major, is called *minor*.

All chords are understood to be major, if not otherwise marked or expressed.

To change a major into a minor chord, we have only to lower its third a semitone, and the chord becomes minor; thus:—

In order to accustom the ear to distinguish the difference of effect, a chord should frequently be played alternately major and minor.



Having now fully explained the construction of the minor chord, we will here show, though the subject will be hereafter resumed,

HINTS TO FIND THE NUMBER OF SHARPS OR FLATS BELONGING TO ANY MINOR KEY.

For this purpose, it is only neccessary to ascertain the third of any minor chord; and whatever sharps or flats are required by that third (if taken as a major key note), the same number are required for the minor.

* See Ex. 157, where the nature and origin of the minor scale are fully treated upon. At the present stage, it would not be advisable to enter upon the subject.

At I, the chord of C minor is C, Eb, and G; the third of this chord is Eb; the key of Eb requires three flats; therefore the key of C minor requires three flats.

At II, G minor requires two flats. Why? - Because its third (Bb) requires two flats.

Why does the key of E minor require one sharp? — Because the chord of E minor is E, G, and B: G is the third; G requires one sharp; therefore E minor requires one sharp.

THE RELATIVE MAJOR AND MINOR KEYS.

It is necessary to mention that each *major* key stands in intimate relationship with a minor key, called its *relative* minor. This *relative* minor is always found four semitones *below* the key-note of its major;* and has for its signature always the same number of sharps or flats as its major.

What is the relative minor to C? Answer - A minor.

Are there any sharps or flats in A minor? Answer-No. Why?-Because the key of C major has none.

What is the relative minor to F? Answer - D minor.

How many flats has D minor? Answer - One flat. Why? Because F, its relative major, has one.

What note is flat? Answer - Bb.

The following example exhibits a regular progression through the whole circle of *major* and *minor* keys. It commences with the key of C major and its relative minor, proceeding through the keys requiring flats, which gradually increase in number until, arriving at E P minor (six flats), that chord is changed enharmonically to D # minor (six sharps); after which, by sharps (which gradually decrease in number) the progression returns to the *original key*.





In examining the preceding example, we perceive, from the beginning to the end, not only a beautiful symmetry and regularity pervading the whole, but also a *double* union of intervals—two of them always remaining undisturbed,—as shown by the curved lines.† The same union likewise subsists between the relative minor and the chord which immediately follows it; the whole progression forming a chain of harmony unequalled in any of our former exercises.

The pupil is strongly recommended to practise it on the pianoforte, as it forms the groundwork on which may be constructed an almost infinite number of passages and variations, serving, subsequently, as materials for more extensive exercise. This will in some measure appear, if we examine the specimens exhibited in the following examples, which, though few in number, are sufficient to show the extensive variety of effect which may be given, even with only simple common chords.

† Why this close union subsists between the chords in this progression will be better understood when we arrive at Ex. 67.

^{*} The pupil may find this minor key on the pianoforte by counting four semitones from the key-note to the left-hand counting the key-note one.

No particular rule, as to the construction of all the variety of passages arising thus from a progression of chords must here be expected; as it would be calculated rather to cramp than to assist and expand the inventive faculty of the pupil. Let him learn to choose for himself.

A FEW SPECIMENS OF VARIATION WHICH MAY BE EMPLOYED IN PERFORMANCE.



ORIGIN OF MELODY AND HARMONY,

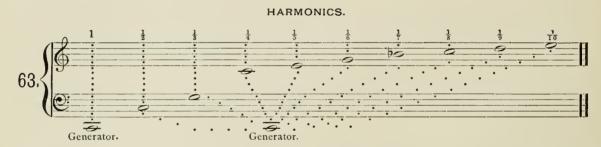
THE DIATONIC SCALE, FUNDAMENTAL BASSES,

AND

MODULATION.

When a musical string is put into vibration, we may imagine that we hear only a single sound; but, on listening attentively, we shall discover that the principal sound, particularly if it be one of the deep tones of the pianoforte, is accompanied, though faintly, by other sounds, called its "Harmonics."

By all sonorous bodies (a bell, for instance) the principal sound and its harmonics are produced at the same time, and are all heard at once; but by wind instruments (as the French horn, trumpet, etc.) they are produced separately, so as to be distinctly analyzed; and these prove to be exactly the same, in order and proportion, as those produced by the vibration of a musical string. Thus a tube or string, whose *lowest* sound is C, will introduce the following



These are the sounds in the order in which they are actually produced from the tube of the French horn, etc., etc.*

The lowest sound we shall call the foundation or generator of all the rest, which are called its *harmonics*, and which appear to be, as it were, regular portions or fractional parts of the *generator*.

The *first* note above the *generator*, being the octave C, may be considered as one half of the *whole tube*; in fact, one half of this tube would really produce, as its lowest note, this very octave C.

By the same rule, G would be produced by a tube which should be only *one third* the size of that which produced the generator, and so on with the rest, as marked in the example.

To illustrate this still further, let us extend a musical string over two bridges until its grave sound be the same as that produced by the *tube* C. If we then place another bridge exactly in the middle, *each half* will produce the octave of the whole. If we divide the *same string* into *three* equal portions, *each* of the three portions will produce a G; and so with all the other divisions.

Referring to the scale of the *harmonics* in the preceding example, it will be remarked, that they are produced in a succession of gradually diminished distances from each other, until they end in a progression of whole tones—a real *diatonic progression*, thus:—

The note first appearing above its generator is the 8th.

The next is a 5th above that.

The distance to the next is a 4th, and the next a major 3rd, etc., etc.

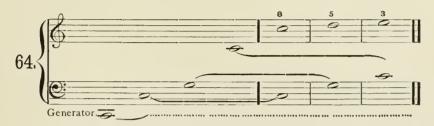
All the sounds, as far as E (the last note in the example), are perfect and satisfactory to the ear.

* In this example we see at one glance the chord of the fundamental seventh, modulation, melody, and harmony.

Let us now take the *three last sounds* produced by the tube, as a scale or melody, and endeavor to harmonize it. How are we to proceed? We must discover the fundamental basses; but by what means?

Let us take as basses, the three first sounds produced by the same tube, and our object is accomplished.

SCALE OF THREE SOUNDS WITH ITS FUNDAMENTAL BASSES.



I'he fundamental basses being discovered, we shall now add the chords.

SCALE OF THREE SOUNDS HARMONIZED.



Referring again to example 63, let it be observed that among the harmonics of C, the 7th sound is B? This is not the seventh note of the scale of C, but the fundamental 7th, being a whole tone below the 8th.†

When the chord of C is heard with this seventh added, it at once assumes the character of a dominant chord, and thus produces an irresistible inclination to proceed to its tonic. The ear acknowledges, in the 7th, a decided tendency to descend, ‡ and in the 3rd, an equal tendency to ascend into the nearest sound of the chord which immediately follows.§

Therefore, after having harmonized the scale of three sounds produced by the harmonics of the tube C (the last of which is accompanied by the chord of C), were we to bring the 7th sound prominently forward, and add it to this chord of C (as in the following example, 66, I), we should be irresistibly forced to the chord of F (as at II).

Thus, were we disposed to extend the scale further than these three sounds at I, the next sound, as here pointed out, must decidedly be F, as in the following example.

Having ascertained that our next bass note can be *no other* than F, let us take that sound as a *new* generator, and treat it exactly as we did the preceding one, C. We have only to consider this new generator as a tube of smaller dimensions, and it will give us, among its harmonics, a melody or scale of three sounds, viz., F, G, A, to which let us write the basses, as pointed out in example 64, and we shall form a scale of six notes, properly harmonized.

- * It will be observed that the chord of C, formed by the harmonics in Ex. 65, is not complete until the appearance of the 3rd (E), and therefore when the third is at the top, we shall call it the first position of the chord; when the 5th (G), appears at the top we shall call it the 2nd position of the chord; and with the 8th at the top, the 3rd position. (See page 9.)
 - † See preliminary observations on the dominant 7th, page 19.
 - ‡ See Ex. 40 (b). § See Ex. 40 (a).

¹ The figures 8 5 3, 8 5 3, placed over the six notes in the above example, will explain the principle upon which the finding of the fundamental basses in Ex. 23, is established.

SCALE OF SIX SOUNDS.



We have now six notes, and, if we desire to extend the scale still further, to what note must we next proceed?—to B?——Why?—To answer this question let us apply the same reasoning which guided us in discovering the second generator, F.

The generator of the *last* scale of three sounds being F, let us add the 7th to the last chord, and the bass F, thus becoming a dominant, will lead us to Bb, and thus we gain a third scale of three sounds. viz., Bb, C, and D (as in Ex. 67, A, bar 3). Here also another 7th may be added to the last chord of this scale, which will lead us to the scale of Eb (bar 4), and thus we might continue to proceed, adding scales of three sounds ad infinitum.*

NATURAL SUCCESSION OF SCALES OF THREE SOUNDS, HARMONIZED.



PROGRESSION AND MODULATION.

When the harmony moves from one scale of three sounds to another, without the aid of the chord of the fundamental 7th, we shall call it simply a progression. (Ex. 67, B, a.)

When it thus moves by the aid of the chord of the fundamental 7th, we shall call it progression and modulation. (b.)

But when it proceeds directly from the *first* chord of a scale to the *first* chord of the following scale, or, in other words, from key to key, by the aid of the chord of the fundamental 7th, we shall call it *modulation*. (c.)

* It appears clear, from this examination, that no scale can naturally consist of more than three sounds, for which there are only two fundamental basses required. The subdominant, which we have hitherto employed, appears now to be really the generator or lonic of its own scale.

MODULATION. 43



These subjects will be resumed in their proper places; meanwhile let us apply what has been already said, in an examination of the *diatonic scale*, with which this work commences.



In the preceding example, the first three sounds, C, D, E (I.), are in the key of C. The harmony moves by progression, until it arrives at the third sound, E. Here, however, by the introduction of the fundamental 7th (B^{\flat}) , on the chord of C, a modulation to F takes place. (II.)

When we arrive at the sixth sound (A), the ear, as far as regards the harmony, feels no natural inclination to return to the *original* key, as we have *modulated out of that key*; yet, if we are determined so to do, we may return to it, but only by the *same means*, viz., *modulation*; and, as we modulated to F by C (the dominant of F), so we modulate back to C by G (the dominant of C). (III.)

It will now be perceived that, in this case, the seventh note in this scale could not be B?, as found in example 67. It must here be B?, because the dominant chord of G, thus introduced, requires that its third should be major, and ascend a half tone to its tonic, C.*

The pupil will now see the reason why the diatonic scale (concluding upon the note from which it set out) requires the half tones to be between the 3rd and 4th, and 7th and 8th.†

Thus we complete a scale of eight sounds, commencing and ending in the *same* key. Had we, on the contrary, after arriving at the sixth sound (A), proceeded as in Ex. 67, A, we should have diverged still farther and farther from the key from which we set out; and, pursuing that course, we should never have been able to arrive again at the original key.

It will now be evident to the pupil why it became necessary to stop the modulation at the sixth sound. Here, also, he will discover the cause which produced the consecutive 5th and 8th between the sixth and seventh of the scale; for had we continued the order of progression pointed out in Ex. 67, A, these consecutives could never have occurred.

MODULATION.

We shall now enter more fully on the subject of modulation; it is one of great importance, and, in order that the pupil may be impressed with a correct idea of its nature and object, and of the extraordinary influence which it exercises in a well constructed composition, it is only necessary to observe, that those works which lay the strongest claim to excellence have derived it in a greater or less degree from this inexhaustible source; more especially with reference to modern compositions.

Here we shall observe that *progression* stands in strong contrast with *modulation*; for, while the *former* moves and ranges among the chords immediately connected with the key (in other words, its generator), or

such as are related to it, the *latter* at once carries us out of that key to another. The principle by which we are to be guided in modulation, as well as the course to be pursued on every occasion during our progress, is pointed out by Nature herself. This fact has now been so well established, that it may perhaps be superfluous to refer to it again. But let us keep our guide in view, and she will not permit us to go astray.

It may be remarked, that although modulation embraces such an important branch of harmony, and occupies a position of so much consequence, yet the principle on which it is founded is exceedingly simple.

THE RULE OF MODULATION.

The dominant of the key to which we intend to modulate, must be introduced immediately before that key.

By way of illustration, let us select the three first bars of example 61, which contain a progression through all the major and minor keys.



How shall we change the exercise of *progression* at X., in the above example, into one of *modulation*—what says the rule?

Place the dominant E (I.) before the chord of A minor, and the dominant C (II.) before F, and thus the progression will be changed into modulation at Z.*

Let us again illustrate this by the following interrogatory. Suppose we are in the key of F, and would modulate to the key of D minor, what bass must we introduce before D? Answer, A.

Q. Why?

Because A is dominant to D, whether that key be major or minor.

Q. We are now in the key of D *minor*, and would modulate to $B \flat$. What bass must we introduce before $B \flat$?

Answer, F.

Q. Why?

Because F is dominant to Bb.

In the preceding example we have shown:—

1st. The nature of modulation, by placing it in contradistinction with progression.

2nd. The rule by which modulation is to be effected when the key has been proposed.

But let it be remembered that it is one thing to find the *dominant* when the key to which it is *proper* to modulate is proposed, and quite another thing when the pupil himself is required to find the key to which he may modulate.

The rules by which he may accomplish this object shall now be given; and we will here again repeat what we have so frequently endeavored to impress upon the mind of the pupil, that *Nature alone is our instructress*; if, on a former occasion, *this fact* has been clearly shown, then the present investigation will still more clearly demonstrate that the principles of *modulation* emanate from the same *source*.

It has been shown elsewhere that Nature, in developing the principles of harmony, in the vibration of sonorous bodies, etc., etc., produces *certain sounds*, which, in their progression, not only form melodies, the but also form a union amongst themselves as *chords*, with which these melodies are accompanied. These *chords* in their *progression*, thus forming harmony, participate in this unity, much in the same manner as do the sounds of which the chords are constructed.

* When we modulate to a minor key, the 7th will descend a whole tone, instead of a half tone. See page 20.

Let us keep in mind that, whether we modulate to a major or minor key, the dominant chord must always be major.

† See Harmonics, Ex. 63, 64.

§ Ex. 65.

| See Harmony in four parts, Ex. 29.

RELATIONSHIP OF KEYS BY MODULATION.

This will be rendered plain by the following diagram:—



If we examine the *upper* row of the *horizontal* figures, commencing with 8(c), 5(d), 3(e) (which point out the true fundamental basses),* we shall find, by looking from c, at the figures 8, 5, 3, downwards, that they are the *same* figures, and express the common chord of *that* note (c). †

If we commence at d, the second note in the scale, the horizontal figures will be 5, 3, 8. The last figure, 8 (f) is the first link which unites the first generator to the second. Looking downwards, the same figures express the common chord of the bass of that note (g b d).

Let us commence at e (the third note in the scale). 3, 8, 5, are the horizontal figures; the two last of which, 8, 5, form two links more in uniting the first generator with the second. We shall find the same figures express the common chord of the bass of that note (c e g) by looking downwards.

Here we find that the generator C with its dominant and harmonies is closely interwoven with the generator F, and its dominant, and harmonies. The first of these generators is the dominant to the second generator, F.‡ Whether we view these figures horizontally, obliquely, or perpendicularly, they always form the common chord, as produced by the vibration of a string, etc.

From what has been stated, would it not appear that there are *certain keys*, *also*, which stand in immediate *relationship* with each other as the aforesaid chords do in their *progression*? And that this is the fact, shall be fully and practically demonstrated as we proceed.

That modulation can be effected only by the dominant chord of the key to which we modulate, is pointed out to us by Nature, and illustrated at Ex. 67, B, and 70.

The discovery, therefore of a dominant, by which we shall be enabled to modulate from a given key to one of those which stand in relationship with that given key, is a matter of the first importance; and it may be said that in this consists the whole mystery of modulation.

Considering the subject in this point of view, then, let us examine the *chord* of the key, from which we are about to modulate, and see whether we can discover a sound in that chord, which, by being employed as a *dominant* will guide us to a key with which the *given key* stands *related*; and as such *dominant*, when once discovered, stands in the same relation as the *branch* does to the tree, or a child to its parent, no doubt could exist as to the relationship subsisting between the given key and the *dominant so found*. Now, that these dominants may be discovered *thus*, will be evident if we attend to the following simple process.

We shall suppose ourselves, for example, to be in the key of C: the pupil wishes to know to what key he may modulate.

^{*} See Ex. 64. † Ex. 65.

[‡] Do we not here clearly perceive the origin of the tetrachord as well as the hexachord of the ancients; the former ending with the fourth sound, and the latter with the sixth? See Ex. 67, A and B. And whether Guido was the discoverer of it or not, one thing is certain,—that those scales and their harmonies are as old as creation itself.



Let him select the 3rd (E) of the chord C, in bar I. Write it in the bass (at 2), add the chord of the fundamental 7th, and resolve it (at 3). By this process, he is enabled to modulate to a key which stands in the closest relationship with the given key; viz., its relative minor, A.

Q. Why? Because the 3rd of the chord of C is E, and E is dominant to A.*

Observe, we are now in the key of A minor; but how shall we return to the original key of C? Does the chord, from which we selected our first dominant, furnish any note by which, as a dominant, that object may be effected?

Yes, the pupil has only to select the 5th, G, of that chord, and, as G is dominant to C, he is enabled to modulate back again to the original key of C (at 5).

From what has been shown above, the intelligent pupil may perhaps have already anticipated that selecting the octave C (the key from which we originally modulated) as a dominant, will enable him to modulate to F, the subdominant † (at 7), and by again selecting the 5th, (G) of the original key, modulate back to C. ‡

Thus an important and unerring principle in modulation is established, viz., that —

A MAJOR COMMON CHORD CONTAINS WITHIN ITSELF THE GERM OF THREE MODULATIONS.

1st. A modulation to its relative minor, as above, at bar 3.

2nd. to its subdominant, " " " 7.

back to its own key " " 5-9. 3rd.

The following general observations require to be carefully attended to by the pupil, as we shall have occasion to refer to them frequently.

(m) When we select the 3rd of a major key we ought to modulate to a minor key. § See bar 3.

the 3rd of a *minor* key — to a *major* key. — to a *major* key. — to a *major* key.

(o) —

——the 8th of a minor key — - to a minor key.



For further illustration of what has been said, we shall now proceed to give a short practical exercise on this interesting subject, preparatory to which it will be necessary to state:—

1st. That we may commence our exercise with any key, and select for dominants any interval of the chord we please, except the 5th of the tonic. Why? — Because that interval is the dominant of the existing

^{*} See Ex. 75. The above modulation may be considered as the first fruits arising out of this fruitful soil.

[‡] That the 5th of the chord cannot be employed thus at the commencement will be self evident, when we consider that 5th is the dominant of its own key, which, while it governs the key, effectually prevents a modulation out of it.

[§] Because it is the relative minor.

key, and therefore cannot, of course, carry us out of it; ‡ but, when we have, by either of the other two intervals, modulated out of a key, then the 5th enables us to modulate immediately back to that key. See Ex. 71, where (at 3) we modulated to A minor, and (at 5) returned to the original key.

2nd. When a modulation out of the original key has been effected, and we desire still further to continue the modulation, then the key at which we have arrived must be treated in the same manner as if we had commenced with it. See Ex. 72, where (at 3) we modulated to A minor, and then selecting the 3rd of that chord, modulated (at 5) to F, etc.

The following exercise commences in the key of G; the first three chords proceed by progression.*

At 4, we have selected the octave, and modulated to C major. — (Why to C major?†)

At 6, we have selected the 5th of the original key (viz., D) and modulated back to G.

At 8, we have selected the *major* 3rd (B), which modulates (at 9) to E, the relative minor of G.— (Why to a *minor*?§)

At 10, we have chosen the 8th, E, and modulated (at 11) to A minor. — (Why to a minor? ||) Here (12) we have selected the 3rd, C, and modulated (at 13) to F major. — (Why to a major? ¶) The rest of the example, it is presumed, will be understood without any explanation.





If the pupil has carefully attended to the preceding matter—studied the examples—and reflected upon all, he must, ere this, have observed how clear, how explicit, the rules are, which Nature unfolds for our guidance in this branch of the science; and, whether we contemplate them abstractedly as to their beauty and symmetry, or listen to the effect which they produce when played, we cannot but admire and wonder at that simple source from which all emanate.—The truth of this observation will be better understood as we proceed; because, as yet, we have introduced as specimens, such modulations only as are derived from the intervals of a tonic chord; but, as the intervals of the chords of the dominant and subdominant may be employed in a similar manner, a system of modulation will be developed, which, when thoroughly understood and carried out into practice, cannot fail to prove highly interesting and satisfactory to every lover of music.

In Ex. 71, all the modulations arising from the intervals of the tonic chord were exhibited in order that the pupil might thus be enabled at *once* to form a general idea of the principle upon which this system of modulation is established.

In the following examples, however, the modulation arising from the 3rd and 8th of this chord shall

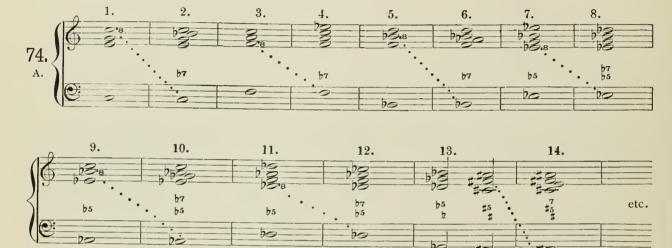
- * See Progression and Modulation, p. 42.
 † See observations (0) before Ex. 72.
 ‡ See note bottom of p. 46.
- § See observation (m). $\|$ See observation (p). $\|$ See observation (n).

be treated separately, as he will thus be enabled still more clearly to distinguish the peculiar effect of the modulation produced through the instrumentality of either one or the other.

We shall commence our

MODULATION BY SELECTING THE OCTAVE OF THE TONIC AS A DOMINANT.*

By pursuing this process, we continue to modulate to the *subdominant* of the original key (or, in other words, to a key which is a 4th above † that from which we set out), and are led through all the keys which require flats, until (after having made an enharmonic change at Gb) we return again to C, through keys which require sharps.‡



In example 74, A, we commence in the key of C major, and select the octave C (at 1). C is dominant to F, therefore we modulate to F major (at 3). Here we select the octave and modulate to B major (at 5). An enharmonic change \\$ takes place (at 13) from G \\$ to F \\$\\$, and thus, by continuing the same process, we modulate back to C.

We shall now select the *same* interval, viz.; the octave from a *minor* key, the effect of which will be found very different to that of the preceding example.

In the following Ex. we commence in the key of A *minor* and select the octave A. A is dominant to D; we therefore modulate to D *minor*.

The process in the following example is similar to that in the preceding, with this exception, that the modulation proceeds through MINOR keys, and in the former through MAJOR keys:—



- * This is the first modulation, as pointed out to us by Nature (see example 67, A).
- † Or 5th below, which is the same.
- ‡ If the pupil, however, chooses to continue the exercise without making an enharmonic change (which, by way of practice, will be very useful), it will conduct him through all the keys requiring double flats, and he will arrive at D double flat.
 - § See page 6, Enharmonic.

The pupil is particularly recommended to *play* all these exercises, in order that he may become practically acquainted with their various effects.

We shall now continue our

MODULATION BY SELECTING THE THIRD OF THE TONIC AS A DOMINANT.*

By pursuing this process we are enabled to modulate through all the *major* and *minor* keys.† We shall here repeat the *observations* made after example 72, as they are of importance.

When we select a major 3rd, we ought to modulate to a minor key.

When we select a minor 3rd, we ought to modulate to a major key.



N.B — Let the pupil finish this exercise himself.

It has been stated (page 47) that the intervals of the chord of the *dominant* and *subdominant* may likewise be employed as dominants.

It is necessary to bear in mind what has already been stated in pages 36 and 45. From what has been there shown by several practical illustrations, it appears evident that the *same connection* which is found to exist between *intervals* forming the *chord* of the *tonic*, exists also between the three *fundamental basses*—
tonic, dominant and subdominant.

If this fact be kept in view, it will at once be understood how it is that those keys, which are related by MODULATION to the tonic, (as shown in the preceding example) must necessarily be related by modulation to those keys which arise out of the intervals of the dominant and subdominant also, although not in the same degree of affinity as those which immediately emanate from the chord of the tonic. With this view, we shall now proceed to select the intervals of the dominant chord, recollecting that the fifth ‡ and third only can be employed as dominants on this occasion.

MODULATION BY SELECTING THE FIFTH OF THE DOMINANT AS A DOMINANT.§

It is necessary, when modulating thus, that the dominant of the key from which we modulate be constantly kept in view; because here we have no visible intervals from which to select our dominants, as in the preceding exercise.

The dots in the following example point out the dominant of the key, and also the fifth of that dominant which is here selected as a dominant.



- * This is the second modulation arising out of this principle. See example 71, and explanation.
- * See example 61, where those keys are exhibited in progression, and compare that example with 75.

 Why cannot the 8th be thus employed? Because that interval is the dominant to the key from which we set out.
- § This is the third modulation arising out of this principle.

By this process we modulate from a given key to its dominant; for instance, from C (1) we modulate to G; from hence to D (7), and thus we may modulate through the whole circle of keys.

TO THE PUPIL.*

Explain how you can modulate from C to G.

At (1) I am in the key of C, the dominant of which is G (2). The 5th of G is D (2). D is dominant to G (3), therefore I can modulate to G (4).

By a similar process we have modulated to D.†

OBSERVATION.

When we modulate from a major key, as above, we again modulate to a major key (X).

When we modulate from a *minor* key, we again modulate to a *minor* key (Y). Let the pupil play the above exercise, and compare the effect produced at (X) with (Y).

MODULATION BY SELECTING THE THIRD OF THE DOMINANT AS A DOMINANT.



N. B. — By this process we modulate to the key of the third above.§

Explain how you modulate from C to E minor.

At (1) I am in the key of C major, the dominant of which is G (2, see dot). The 3rd of G is B (2, see dot). B is dominant to E (3); therefore, etc., etc.

N. B. — When we select the *third* of the *dominant* (as in the preceding example), no *connecting link* is found between the key *from* which we modulate and the subsequent dominant; yet, to that *very circumstance* we are indebted for a beauty and effect which, when mingled with other modulations, is quite peculiar to itself; it is highly characteristic of boldness and independence.

OBSERVATION.

When we are in a major key, and modulate as above, we proceed to a minor key, example 77, X.

But when we are in a minor key, we modulate to a major key, as at example 77, Y. N.B.—In the latter case, the third thus selected must always be considered as MINOR.

The following example exhibits a mixed modulation, arising from the intervals of the tonic and dominant chords.

- * As the bass in the above modulation ascends one degree, it is necessary that the harmony proceed by contrary motion, to prevent consecutive 5ths and 8ths.
- † This method of tuition will, on all occasions, be found most efficacious; it throws the student back upon his own resources, and compels him to reflect.
 - † This is the fourth modulation arising out of this principle.
- § When we modulate thus, let the 5th of the chord ascend. N.B. The 7th may, on this occasion, be permitted to ascend to the 5th, the octave being omitted.
 - || See Weber's Overture to the Freyschütz.



1, has been selected the 3rd of the tonic, a major chord modulates to minor.

the 3rd of the dominant,— - to a major at 9.

— the 8th of the tonic from a major chord,— - to a major at 11. ----- the 5th of the dominant, -At II,

We shall now continue our

MODULATION BY SELECTING THE OCTAVE OF THE SUBDOMINANT FOR A DOMINANT.

to a major at 13.

N. B. — Here, as well as in the preceding modulation, we have no visible intervals from which to make our selection; therefore the subdominant of the key from which we modulate must be carefully kept in mind.



Pupil. - At X, bar I, I am in the key of F # major, the subdominant of which is B(2). B is dominant to E, and therefore I am enabled to modulate from F # to E (3). The subdominant of E is A (4); A is dominant to D (5); therefore, etc.

OBSERVATION.

When we modulate thus from a major key, we modulate again to a major key, X. (See o, p. 46.)

And from a minor again to a minor key, Y. (See p, p. 47.)

By this process we modulate to a key which is a whole tone below a given key; for instance, from F# at I, we modulate to E, at 3, from E to D, etc.

The pupil ought to continue this process through all the major keys, as at X, and through all the minor keys, as at Y; and by making an enharmonic change, he will return again to the original key. (See example 74, A, which bears a strong resemblance to this.)

We shall now continue our

MODULATION BY SELECTING THE THIRD OF THE SUBDOMINANT FOR A DOMINANT.



* This is the fifth modulation arising out of this principle.

[†] This is the sixth and last modulation arising out of this principle.

Propil.—I am in the key of C (bar 1) the subdominant of which is F (2, see dot). A, the 3rd, is dominant to D(3), therefore I can modulate to D minor (4).

OBSERVATION.

1st. In selecting the *major* third (2) of the subdominant, we modulate to a *minor* key (4*). We may indeed occasionally modulate to a *major* key (as at 10); the former, however, as being the *relative minor* to the *subdominant*, is preferable; it produces the better effect.

2nd. It is necessary to observe that when the key is minor, the chord of the *subdominant* requires to be a *minor* chord *likewise* (5). And, further, that when we select the minor third of the subdominant, we modulate to a *major* key (7). † For example, at 4, we modulate to D *minor*, the subdominant of which is G; and as this must be a *minor* chord, we have been enabled, by selecting the third, B^{\dagger} (6), as a dominant, to modulate to E^{\dagger} major (7).

It has now been shown that, by selecting the intervals of the chords of the three fundamental basses, dominants may be found by which, without the slightest apprehension or chance of a mistake, we are enabled to modulate, not only direct to those keys which arise out of, and are immediately related to the tonic, but to those also which are derived from the dominant and subdominant.

The following exercise may be viewed as an epitome of all the preceding. It contains the six modulations arising out of the intervals of the above three chords. When all these six modulations are introduced in immediate succession, the exercise will conclude in the

SAME KEY AS THAT FROM WHICH IT ORIGINALLY SET OUT.



The preceding example begins and ends in the key of C.

It matters not in what key the pupil commences the exercise, or the order in which he chooses to select his dominants; if he but carefully attend to the directions pointed out, he will assuredly be guided back to the key from which he set out. ‡

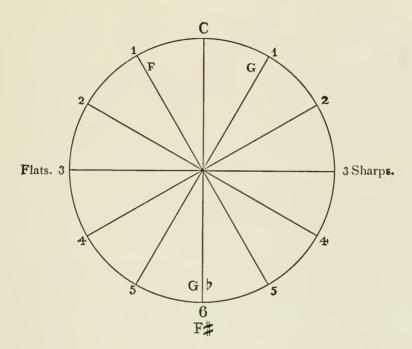
TWO KEYS TO WHICH NO DIRECT MODULATION CAN BE EFFECTED.

On a critical and careful review of the preceding examples, we find that, with the exception of two keys, we have been enabled to modulate direct to all the others, whether major or minor. The first of these exceptions refers to the key which is diametrically opposite to the one on which we then find ourselves; the other is a half tone below that key.

It is curious to observe how *Nature* has excluded these two very modulations, which would produce upon the ear an effect at once harsh and discordant. No *interval* is found among the chords of the three fundamental basses, which enables us to modulate *direct* to their keys. This is a remarkable fact, which,

when coupled with what has been said immediately preceding, example 81, may serve as an additional proof (if it were necessary) of the unerring principles on which these modulations are established.

In order to illustrate what we mean by a key diametrically opposite to another, let us draw a circle and divide it into twelve equal portions, placing C, the natural key, at the top, which, if we please, we may call the north pole. The portions on the right, gradually approximating from the east to the south pole, may represent those keys which have sharps; and those on the left by the west, the keys which have flats.



Here it is plain that, when we proceed towards the *right*, the key diametrically opposite to C is F#; but, when to the *left*, the opposite key will be G. It we consider this circle as representing the map of the world, then F# or G. are the *antipodes* to C; G the antipodes to D., etc. In order, therefore, to discover the antipodes to any given key (requiring *sharps*) it is only necessary to deduct the number of *sharps* which the key requires from six, and the *remainder* will point out its opposite key with *flats*. For example: G has one sharp; deduct one from six, and five remain; — what key requires five flats? Answer, D. Then that is the *opposite* key.

The key of B has five sharps; deduct five from six, and one remains;—what key has one flat? Answer, F. (See page 8.)

What is the opposite key to E^{\flat} ? Answer, A. Why? Answer, E^{\flat} has three flats—three from six, and three remain. The key of A requires three sharps, and that is the opposite key to E^{\flat} .

Again, notice, 1st. To keys which are diametrically opposite to each other, Nature has forbidden us to modulate.

2nd. To the key which is found a HALF tone below a given key (the second objectionable key) we zannot modulate direct, because the dominant, which is required for this purpose, is that very diametrically opposite key to which we are not allowed to proceed directly either by modulation or progression.

A few practical exercises, founded on the preceding rules, shall now be given; and if the pupil is desirous to make himself *practically* as well as *theoretically* acquainted with his subject, he ought to study and play them with variations, as in example 62, and let it be kept in mind that theory and practice must be *inseparable empanions*.

The following example exhibits a course of modulation arising from an uninterrupted employment of the 3rd of the subdominant; and though the 3rds, selected here as dominants, are major (which would

direct as to modulate to minor keys*), yet, for the sake of showing the effect thus produced, we have modulated to major keys† indifferently.‡



By the above process, we continue to modulate by whole tones ascending—that is, we modulate from the key of C to the key of D, from D to E. And, although a chromatic scale is thus produced through the intervention of the dominant, yet we must not confound this chromatic progression with a modulation through the chromatic scale.§

Let the pupil continue this exercise until he arrives again at the original key.

The above example, at Z, shows how a *minor* chord may very effectually be changed into a *major*; thus not only producing variety, but preparing the ear for the modulation which follows. This will be more clearly understood in the explanation of the following example.

We shall now select the octave of the subdominant.

This process enables us to modulate by whole tones descending—that is, from C to Bb, from Bb to Ab, etc., etc.



In example 82, at Z, in modulating by whole tones ascending we changed a minor into a major chord. In this example, at Y, we have changed a major into a minor chord, because we are modulating by whole tones descending. This process of changing a major chord into a minor, or vice versa affords an additional connection between the preceding tonic and succeeding dominant, prepares the ear to hear the following modulation, and softens any harshness of effect which might be produced when modulating to keys remote from the original one, called extraneous, as in the following example where we have modulated to a key within one point of that which is diametrically opposite, viz., from C to Db. Had the chord of C continued major, the modulation to Db would have been extraneous; but, by making that chord minor, the modulation to Db is no longer extraneous, because we modulate not from C major to Db, but from C minor to Db.



^{*} See observation (1), Ex. 80. † Let the pupil himself say which of these modulations he prefers. ‡ See observation on Ex. 80. § See Ex. 84.

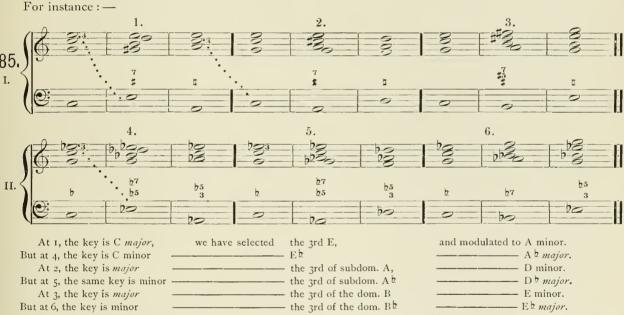
If we continue this process, a modulation by ascending major semitones will be produced.* We have selected throughout the 3rd of the subdominant, and have thus modulated (at 3) to D^{b} ; but as the major semitone which follows D^{b} is F^{bb} , it becomes necessary (in order to prevent the accumulation of flats) to change D^{b} enharmonically into C^{*} (4), and thus modulate to D (5) instead of to E^{bb} ; from hence to E^{b} (6), then to F^{b} (7); here, again, an enharmonic change must take place; F^{b} , at 7, therefore is changed to E^{*} (8), from whence we modulate to F, instead of G^{bb} .

N.B. We have changed the major chord (bar I) into a minor; and this process has been observed at bars 5 and 7. When a note is raised or lowered a half tone, and its position on the staff is thereby altered, it is called a *major semitone*; but when a note is raised or lowered a half tone, without changing its position on the staff, it is called a *minor* semitone; thus, from C to $D^{\frac{1}{2}}$ is a major semitone; from C to $C^{\frac{1}{2}}$ is a *minor semitone*.

The pupil should continue to pursue the same process until he arrives again at C. It is an exercise well calculated to show, not only the use of enharmonic changes, but also how indispensable they are when modulating into extraneous keys.

It may have been remarked that, in selecting our dominants, we had especial regard as to whether the chord from which they were selected was *major* or *minor*. As this is a matter of importance, we shall proceed to point out those keys which are more *immediately* and *directly* related to *major*, and those related to *minor* keys.

If the pupil has carefully examined examples 67 to 72, and comprehended what has been stated with reference to them, it will be clear that were we to set out from a *minor* key, the modulation would be different from that which would flow from a *major* key.



N.B. At 3 and 6, the 5th of the dominant chords has (for the sake of effect) been permitted to ascend, in consequence of which, the 3rd in the tonic chord, which immediately follows, is doubled.

In the above example, the 3rds only have been selected as dominants to show their influence; it has already been shown† that the octave of the tonic, the octave of the subdominant, and also the 5th of the dominant, exercise a similar influence, although not quite so decided. Instances of these are given in the following example:—



^{*} See observation on Ex. 80.

[†] See observation on Ex. 72, 76, and 79.



At 1, the key is C major,

But at 4, the key is C minor

At 2, the key is major

But at 5, the same key minor

At 3, the key is major

But at 6, the same key minor

But at 6, the same key minor

At 3, the key is major

But at 6, the same key minor

At 3, the key is major

But at 6, the same key minor

At 3, the key is major

But at 6, the same key minor

But at 7, the key is C major,

But at 6, the same key minor

But at 7, the key is C major,

But at 6, the same key minor

But at 7, the key is C major,

But at 6, the same key minor

But at 6, the same key minor

But at 6, the same key minor

The two preceding examples (85 and 86) plainly show (especially when played, and on comparing the different effects produced by I and II) how very much a modulation is influenced in its course by the key from which we set out, whether that key be major or minor. They also teach us, that were we simply to change a major key (to which we had modulated) into a minor, the whole course of modulation would at once receive an entirely new impulse and direction; that is, in the latter case (minor), we should be directed to those keys which are immediately related to the minor (II—4, 5, 6); and, vice versa, by changing a minor key into a major, we should modulate to those keys which stand in relation with the major (I—I, 2, 3).

We shall now suppose the pupil placed at the pianoforte, and about to pursue a practical course of modulation.

He is already aware that he may modulate *direct* to any key except two; (the reason has been shown in page 52.) We shall suppose him to be in the key of C; and instead of asking himself, as heretofore, "To what key can I modulate?" let him at once say, "I will modulate to such or such a key." We shall suppose him to have chosen F. His next inquiry would be: What is the dominant of F?—Answer, C. From whence have you derived the dominant?—Answer, From the octave of the tonic.

I am now in F, and will modulate to Eb. What is the dominant?—Answer, Bb. From whence is that dominant derived?—Answer, It is the subdominant of F.

I am in Eb, and will modulate to its relative minor C. What is the dominant to C?—Answer, G. From whence is that dominant derived?—Answer, From the third of the tonic.

I will modulate to G minor. The dominant is D. From whence do'l derive that dominant? (See Ex. 76, y.)

I will modulate to Bb. The dominant is F. From whence is that dominant derived? (See Ex. 77, y.)

I am in Bb. — Can I modulate to E? No; because the key of E is diametrically opposite to Bb. (See Circle of Keys page 53.)

And thus he may continue his exercise.

If the principle on which these modulations are founded be well understood, no further illustration will be required; nor will the pupil experience the slightest difficulty or embarrassment in his exercise; that is, provided he is quick and ready at finding the *tonic* to any given *dominant*.*

It must now be manifest to the student what an inexhaustible variety of modulation may be produced by the application of the preceding simple rules; and, as they are based on an unerring law of nature, the learner can never go astray; it is *impossible*, nothing is left to chance — nothing to guess at. Let the pupil avail himself of the extensive power of modulation now placed within his reach, varying his selections from the different intervals according to his own taste; and, by following his guide carefully, he must produce ever new, and only the best effects; all harsh and *extraneous* modulation being *totally excluded* by the rules themselves. The following example may serve as a specimen of the effective employment of the preceding rules of modulation; and it will be observed, that in this instance we have not confined ourselves to mere

^{*} This habit may easily be acquired, by simply recollecting that, in keys with sharps, the tonic has always one sharp less than the dominant; and, in keys with flats, the tonic has one flat more. Thus, if the dominant is D, the tonic will be G. Why?—Because D has two sharps, and G but one. If the dominant be F, the tonic will be Bb. Why?—Because F has one flat and Bb has two flats.

modulation, but have occasionally introduced progression.* This intermixture of modulation and progression will greatly add to the general effect, and prevent the monotony which would otherwise occur.†

It will be observed that, in writing the *variations* in this exercise, we have not confined ourselves to the simple intervals of the chords, as in examples 35, 36, 62; on the contrary, we have employed them in such a manner as to form a *variety* of passages, to the construction of which the pupil is advised to pay particular attention. Neither have we written the chords in that simple form in which they appeared in the preceding examples, but, in order to make the exercise as useful as possible, we have written the *same* chords in different positions; and, to add still more to the general effect, some of the intervals have been doubled; ‡ and if they are played thus on the pianoforte, whilst another performer plays the variation an octave higher, the effect will be found pleasing.

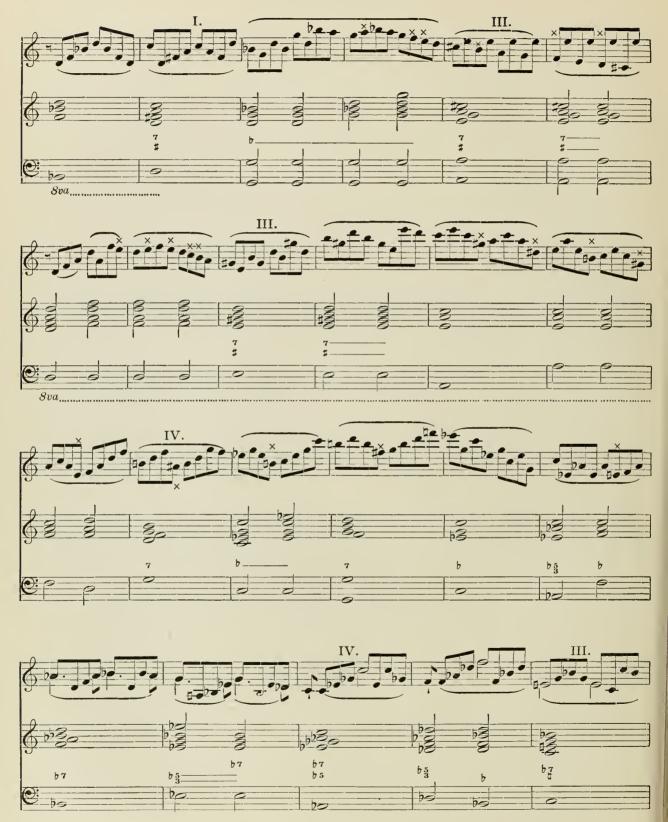
To make this matter still more interesting, a few *notes* have been introduced into the variation, which *do not form a part* of the harmony, called "Passing and Auxiliary notes," into an explanation of the nature of which it is not at present necessary to enter; the subject will be fully considered hereafter.

EXERCISE ON MODULATION AND PROGRESSION.





- * These progressions are pointed out by the letter P.
- † To the professor. It must be kept in mind that up to the present time, we have been entirely confined to fundamental harmony; when we arrive at inversion, our field of operation will be vastly enlarged; but, how extensive will that field be when we arrive at the Inversion of the Chord of the 9th, Equivocal Modulation! etc., etc.
- † Doubling of intervals in accompaniments is permitted, and consecutive octaves arising thus, as in the present instance, are never considered as such; but we must be careful not to confound this writing accompaniments with writing in four real parts, where every interval we know, has in its progression its place distinctly pointed out. See Ex. 56, etc.
 - § A few of these notes are pointed out by a mark, thus X.





Note. - X, Y, W, Z, show the different ways of doubling some of the intervals of this chord.



References to examples from which the above modulations have been selected.

1. Ex. 74 (A), 8ve of tonic.—II. Ex. 75, 3rd of tonic.—III. Ex. 76 (Y), 5th of dominant.—IV. Ex. 79, 8ve of subdominant.—VI. Ex. 80, 3rd of subdominant.

AN ESSAY

ON

INVERTED BASSES.

If the pupil has carefully studied and comprehended the matter contained in the preceding examples, he must have observed that the harmony employed heretofore has been derived from the vibration of a sonorous body:* this harmony we call fundamental; because it is the basis and foundation, the solid and primitive rock, it may be said, upon which rests the entire superstructure of musical composition. The bass of this is called the fundamental bass, in contradistinction to that which is called the inverted bass, with which the pupil shall now be made acquainted.

He will have noticed the peculiarity of the fundamental bass with respect to the progression of its *intervals*, as compared with the progression of the intervals of the rest of the harmony; for, while the former performed its evolutions by extended distances, such as 4ths and 5ths, the latter did so by 2nds and 3rds. This fact should be well kept in mind; and the pupil is recommended to review once again what has been said on the peculiar character of the *four parts* at page 33.

It is evident that, were none but *fundamental* basses to be employed, a great monotony would be the result; not only in the bass, but in other parts also.

By the employment of the *four rules* in harmonizing, without the addition of a single fundamental bass, very considerable and important changes *have* been effected, and variety produced, not only with regard to the harmony as a whole, but likewise as respects the individual *melodies* of the soprano, alto, and tenor.† However, although these rules have the power to influence the immediate *progression* of the *fundamental bass*,† yet after all, they can produce ONLY *common chords* and chords of the *fundamental* 7th: all that could be effected therefore (as far as *fundamental harmony is concerned*), has been effected.

Our object's all now be to show how the *characteristic difference*, still existing between the progression of the bass and that of the other parts, may be removed; how the bass may be incorporated with the harmony so that it shall lose (for a time at least) its individuality—that all monotony shall disappear—new effects be elicited—and the whole harmony assume an aspect differing from any of the former, yet without altering the fundamental progression on which it is established.

It has been made clear that, by the employment of the four rules, the fundamental 7th appears sometimes in the soprano, sometimes in the tenor, sometimes in the alto, but never in the bass.‡ If this fact be kept in mind, the pupil will almost anticipate what is now proposed for his consideration, namely, how to find a bass which shall in its progression assimilate with, and partake of the character of the other parts of the harmony, yet without destroying, in a single instance, the foundation upon which the harmony has been constructed. An example will make this plain.

We shall suppose the pupil to make a modulation from C to F, as in the following Ex.



At I is a modulation by *fundamental basses*, and no similarity of progression is perceivable between the bass (as it proceeds from tonic to dominant) and the other intervals of the harmony.

But if we take E, the *third* of the dominant chord (as at II), and convert that interval into *a bass* note, a similarity will be effected. for the bass E will then proceed by *one degree* to the tonic F.

Thus a new bass note is found; which in its progression assimilates with the rest of the parts, without changing the nature of the fundamental harmony, and also produces a new and important effect. A bass note, thus chosen, we shall call an inverted bass; and as this inverted bass occupies now the fourth or lowest part of the harmony, the fundamental bass must be expunged, as it forms no longer a portion of the four parts. The intervals, also, which are thus chosen for inverted basses (and which are pointed out by dots) must not be allowed to remain in the chords from which they are taken.

As the 3rd of the chord is the *first* interval which presents itself immediately above the fundamental bass,* so when *that* interval is chosen as an inverted bass, we shall call it

THE FIRST INVERSION OF THE FUNDAMENTAL SEVENTH.

Let the pupil now, by way of exercise, make a few modulations, first by the *fundamental bass*, and then choose his inverted bass, as shown in the above example.

When he has written such modulations, by the *first* inversion, as at III—played them, and formed his judgment as regards the *difference* of *effect* between fundamental and *inverted* basses, he may be introduced to other inverted basses; but, before we proceed, it will be necessary to enter a little more minutely into the nature of figuring the inverted bass.

FIGURING THE INVERTED BASS.

It has been stated elsewhere ‡ that every bass is supposed to be accompanied by its common chord, and therefore requires not to be figured; but this, let it be well kept in mind, applies to fundamental basses only. With respect to inverted basses, the case is widely different; for, although the notes of the chords remain the same, yet the names of the intervals, with reference to the inverted bass, are not the same; they must now be counted from the inverted bass, and figured accordingly; in fact, it is only now that the real figured bass commences; and the necessity of figuring the bass thus will be evident. For instance, let us suppose the fundamental basses, at II (in the preceding Ex.), together with their chords, were removed—and that we were required to play the chords to the three bass notes, C, E, and F—the performer would play three common chords; but this is not the intention of the composer, for it is intended that the inverted bass E shall represent the chord of the fundamental 7th of C, and not the common chord of E. Here, then, we perceive the absolute necessity of figuring the bass, so that it shall truly represent the chord intended.§

Let us now ascertain what figures are required to be placed over the bass E, in order that it may express the dominant chord of C.

The first inversion, therefore, of the dominant chord is figured thus $-\frac{1}{5}\frac{6}{5}$; || no matter in what position the chord may appear. Compare I with II and IV in the following Ex.

^{*} See construction of the common chord. — Example 14.

[†] Why the chord of the fundamental 7th is first selected for inversion, rather than the common chord, is, that the pupil may at once enter upon a course of practical modulation by inversion, which the latter would not have afforded.

[‡] See page 19. § This is called playing from figured basses.

The 3rd, in figuring this chord, is generally dispensed with, except when it requires an accidental. See III, IV.



At I, the 8th of the fundamental bass is in the soprano, expressed by 6.

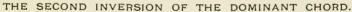
At II, the 7th _______5

N.B. — Where any interval requires a #, \$\nabla\$, or \$\pi\$, the corresponding figure must be marked likewise, as has been already explained in page 19.

The reason why we have been so *circumstantial* in the *explanation* of the *first* inversion is because we are now arrived at a very important branch of the practical science; and it is necessary that the pupil should, at the very *outset*, obtain a clear and comprehensive view, not only of the characteristic difference which exists between *fundamental* and *inverted* harmony, but also of the mode of employing them with propriety and effect.

From what has been stated, it is clear, that if the 3rd of the chord can be employed as an *inverted bass*, the 5th of the chord may be thus employed also.

In the following example, at I, the dominant chord appears fundamental. At II, the 5th (G) of the dominant chord C has been selected as an inverted bass; and as the 5th of that chord is the second interval which presents itself above the fundamental bass, we shall call it





^{*} See page 19, 26th line.

[†] Occasionally in books on figured bass, a figure will be found with a line diagonally across it, this is merely another mode of writing, and means that the note indicated shall be raised a semitone.

FIGURING OF THE SECOND INVERSION OF THE DOMINANT CHORD.

At III,	From	the	inverted	bass	G	to I	3 b	tenor	is a	3rd	(original	7th	of	the i	funda	mental	chord).
	From				G	to (3	alto	is a	4th	(original	8th						<u>;</u> .
	From				\mathbf{G}	to E	E s	opran	o is a	6th	(original	3rd						١.

The second inversion, then, is always figured $\frac{6}{3}$, in whatever order the intervals of the chord may appear.

The pupil should now, by way of exercise, write an extensive modulation by the second inversion, and then employ both the 1st and the second according to his own discretion, carefully figuring the bass, and observing to mark the #, or any accidental that may occur; he should then play the whole, marking well the difference of the effect produced by the different inversions.*

We shall now proceed to the explanation of the *third inversion* of the *fundamental 7th*; it is not improbable that the intelligent pupil, if he has carefully attended to the preceding exercises, may have already anticipated the subject, reasoning thus: If we can take the 3rd and 5th of the dominant chord as an *inverted bass*, why not take the 7th of the chord *also*?

In the following example, at I, we have again made a modulation from C to F, by the fundamental bass; and, by selecting the 7th at 2, as an inverted bass, have produced

THE THIRD INVERSION OF THE DOMINANT CHORD.



FIGURING OF THE THIRD INVERSION.

The third inversion, therefore, requires to be figured $\frac{6\dagger}{4}$, no matter in what order the intervals of the chord may appear.

N.B. — Let the pupil be careful always to expunge from the chord the interval which is chosen for an inverted bass, and which is pointed out by a dot.

^{*} When the pupil is able to perform modulations with ease and facility (during the performance of which he should fix his eye as much upon the figures as on the notes), he may try to play without the notes of the treble, by covering them with a slip of paper thus he will learn (if he desires it), to play from figured basses. See remarks at top of page 20.

[†] It is sometimes 4 when the 6th does not require an accidental; and sometimes with a 2 only.

It will have been observed that the bass notes of the 1st and 2nd inversion, in their progression, have always proceeded to the *tonic* or fundamental bass; but not so with the third inversion; because the fundamental 7th (which is the third inversion) descends, as it ought to do, into the 3rd of the *following tonic* chord. where it produces the *first inversion* of the common chord. This is figured §; because, as at II., 5,

From A (now an inverted bass) to F is a 6th, originally the 8th of the fundamental harmony.

The pupil may therefore consider it as a general rule (for the present, at least) that the chord of the $\frac{6}{4}$ should be followed by the chord of the $\frac{6}{3}$; *(first inversion of the common chord).

The remainder of the example shows the same chord in different positions.

We have now gone through the three inversions of the dominant chord, and we believe that nothing has been omitted that could tend to bring the matter in a more clear and intelligible form before the eye of the pupil, or better impress it upon his understanding. Experience, however, has proved that it is possible to know a thing and not understand it—that we may understand and comprehend it, and yet not be able to put it in practice. It is therefore absolutely necessary that the student should put into practice what he has here learned. To this end, he should write various exercises in modulation, employing the three inversions with occasional fundamental basses; let him then play these exercises carefully, listening attentively to the effects produced by the different inversions, mixed with fundamental progression. Such a practice cannot be too strongly recommended; because not only is it calculated to improve the ear, but to give quickness to the eye in reading music at first sight (particularly if the modulation be sometimes extraneous). It teaches to play from figured basses almost intuitively; in one word, it is the groundwork of composition, engendering musical ideas, which subsequently may be carried out so as to produce a regular, finished composition; particularly when these exercises are played in various measures of time, † intermixed with cadences, ‡ by which they assume a rhythmical form, which is the very life and soul of a musical composition.

On this latter subject we shall treat hereafter; for the present, let the pupil follow the advice here given, and he will be well repaid for his trouble.

The following interrogatories will tend much to impress the matter upon the mind of the student; -

- Q. What do you understand by fundamental harmony?—It is the harmony derived from nature, and is the basis upon which all inverted harmony rests. (See Example 63.)
- Q. What do you understand by inverted basses? Such basses as are derived from fundamental harmony.
- Q. How are these basses found? By choosing intervals out of the fundamental harmony, and converting them into bass
- Q. What effect does this arrangement produce? It prevents *monotony* in the *bass*, and gives uniformity of progression to the whole harmony, producing a new and striking effect.
- Q. How many inversions does the chord of the fundamental 7th, or dominant chord produce? Three.
- Q. What is the first inversion of the dominant chord, and how is it figured? By taking the 3rd of the dominant chord as the inverted bass, we have the first inversion. The inverted bass is figured 6, and ascends a half tone to its tonic. (Example 87, II.)
- Q. What is the second inversion, and how is it figured? By choosing the 5th of the dominant chord as an inverted bass we have the second inversion. It is figured \(^6_6\), and descends a whole tone to its tonic. (Example 89, III.)
- Q. What is the third inversion, and how is it figured? By choosing the 7th of the dominant chord, we have the third inversion. It is figured \(\frac{6}{4} \), and descends into the 3rd of the following tonic, producing the chord of the \(\frac{6}{3} \) (the first inversion of the common chord.) (Ex. 90.)
- Q. Is it permitted to let the *interval* which has been chosen as an inverted bass remain in the chord?—No; it must be expunged.
 - Q. Why? Because it would produce consecutive octaves.

In order that these inverted basses may not draw away the attention of the pupil from the simplicity of the fundamental harmony, or lead him to imagine that new chords have been introduced, it will be

- * It is usually figured with a 6 only, unless when the 3rd requires an accidental.
- † See Rhythm.
- ‡ See Cadences.
- § Those who have studied harmony in the usual way will understand what the author means.

necessary to impress upon his mind that, though new effects have been produced by the introduction of the inverted basses, yet not the slightest addition has been made to the original number of our chords.

Much will depend upon his having clear views on this subject. Let it be remembered, that the harmony arising out of the fundamental basses remains just the same as heretofore. Whenever an interval of a chord is converted into a bass note, that bass note must not be considered as the bass, but only as one of the four parts or melodies of which, at that time, the inverted bass is the lowest part, for the real bass is the fundamental bass.

It follows, therefore, that as all the *intervals* of the *harmony* of the fundamental bass are *governed* in their progression by the motion of that fundamental bass; so, the inverted bass (as one of its intervals) is, in its progression, as much subjected to the control of that fundamental bass as if it had remained a *simple* interval of the chord.

Why the intervals of the inverted bass require to be figured has been already shown. The following exercise on modulation by *inverted* basses will place all that has been said in a still clearer point of view; we shall reserve the former order of our procedure, and *instead* of writing the harmony of the *fundamental* bass *first*, and then selecting the inverted bass, we shall choose the *inversions first*, and afterwards the harmony.

Teacher. — Modulate from the key of C to D minor.

The pupil now writes the chord of C, as in the following example at 1, and the fundamental basses, as at 2 and 3, expressed by *dots*. This is the *first* step.



Q. By the pupil. - By what inversion? Teacher. - By the first inversion.

The pupil now writes C#, the third of the dominant chord (at 5) as the inverted bass, which (as 3rd of the dominant) ascends immediately to D (at 6). This process may be considered as the second step.

Q. How is the first inversion of the dominant chord figured? A. By 6.

(Here the pupil figures the bass as at 8.) — This is the *third* step.

The pupil now writes the chord of the fundamental 7th over the figured bass, 2s at 10, and then resolves it, as at 11. This is the *fourth* and last step, and completes the proposed modulation from C to D minor by the *first* inversion.

Let it be kept in mind, when we are about to write the chord to an inverted bass thus, that the intervals ought not to be named after the figures by which they are represented in that inverted chord, but they must still be called by the original names which they had in the fundamental chord, just as if no inversion had taken place. If this direction be carefully attended to, (which is indeed, as shall presently be shown, of much consequence), it will exceedingly simplify the process of modulation by inverted basses, and remove all that intricacy which, by any other process, is unavoidable.

In order to prove this, we shall take the chord of the fundamental 7th as an example. That chord, we know, contains three intervals, or notes, besides its bass, viz., 3, 5, 7. It admits, therefore, of three inversions; and as each of these intervals in each of

these inversions, when figured, must necessarily appear under three different names, it is evident that much confusion may arise unless prevented by the above process. For instance:—

The original 8th.	\begin{cases} \text{by the 1st inversion will appear as 6.} \\ \text{2nd} & & 4. \\ \text{3rd} & & 2.} \end{cases}
The original 7th.	\begin{cases} \text{by the 1st inversion will appear as 5.} \\ \text{3rd}
The original 5th.	$ \begin{cases} $
The original 3rd.	$ \begin{cases} \frac{\text{by the 1st inversion will appear in the bass.}}{2nd} & \frac{6}{3} \end{cases} $

Now, all this apparent confusion and perplexity vanishes the moment we pursue the process which has been pointed out, viz., calling intervals uniformly not only by their original fundamental names, but with reference to their progression also; for example—at bar 10, in the preceding example, we should ask ourselves the question—

Where is the 3rd?—In the bass. How must the 3rd proceed? (Do not say the bass.) It must ascend.

Where is the 7th? (Do not say the 5th.) In the tenor. How must the 7th proceed? — It must descend.

Where is the 5th? (Do not say the 3rd.) In the soprano. How must the 5th proceed? — It must descend.

By this means the subject is exceedingly simplified, as the attention is constantly directed to the intervals of one chord only, viz., the chord of the fundamental 7th.*

The pupil may proceed thus through a whole course of modulation; having proposed to himself the keys to which he intends to modulate, he first writes the fundamental basses, and, having made his selection of *inverted basses* and figured them, adds the harmony.

That some idea may be formed of the variety of effect which *inversions* produce, when contrasted with *fundamental* progressions, we will select some of the preceding examples, the modulation of *which* shall be rigorously preserved, while the *three inversions* are employed in various ways.

We shall first select example 72, and employ the 2nd inversion $\frac{6}{3}$.

It will be observed that the *same modulations* which occur at I., are again employed at II., but there the *third* inversion $\frac{6}{2}$ is used instead of the second. The few additional bars are introduced merely for the purpose of concluding the exercise in the original key.



That the pupil may reap the full advantage of the following exercises, it is absolutely necessary that he should re-examine and play all the previous examples of fundamental modulations thus selected for inversion, in order that his ear may be impressed again with the effect produced. He will thus at once perceive the great difference of effect between fundamental and inverted basses, not

^{*} Those only who have already made harmony their study will appreciate the simplicity of this arrangement.

[†] In order to make the harmony more complete, the $\operatorname{grd}(G \# \operatorname{at} x)$ has been permitted to fall to the 5th, and the 5th (C at y) to ascend to the 5th of the following tonic.

only as regards the harmony as a whole, but also the melodious progression of the basses themselves; and it is for this reason that we nave chosen to select examples, with the effect of which the pupil has already been made acquainted. Let him compare the bass of example 72 with that of the inverted bass in the above example 92.

When two or more dominant chords follow each other immediately (as in the preceding example, bars 4 and 5), the 3rd of the first chord need not ascend, because the dominant does not then proceed to the tonic, but to another dominant. In this case the 3rd of the dominant descends a minor semitone, and forms the fundamental 7th of the following dominant. The present deviation respecting the regular ascending progression of the 3rd of the dominant chord to its tonic (let it be remembered) can only be permitted in succession of dominant chords, as shown above. (See the N.B., page 29, and example 54, II., bars 4 and 5, where the alto, instead of ascending to the octave, proceeds to the 7th of the following dominant.) If we continue modulating from dominant to dominant, it will produce a protracted modulation, of which the following is a short specimen; but this shall be more fully explained when we treat on that subject.



EXAMPLE 72 AGAIN SELECTED, EMPLOYING THE FIRST INVERSION, 6, AND ENDING IN D MINOR.



The pupil will observe that the *highest* part, or *soprano*, of example 73 (which is here selected for **exe**rcise), is converted into the *bass* part of the following example:—



If we write the *inverted bass part* of this example in the *soprano*, and the *soprano* in the *bass* (as in the following example), an interchange of parts will be the result. Such an interchange of parts is called *double counterpoint* in the *octave*. We mention this circumstance here (merely by the way) to show the great importance of possessing a sound knowledge of *fundamental* harmony, and what may be effected by a proper application of *inverted* basses.

The bass of the preceding example 94 written in the soprano, two octaves higher, with the soprano written in the bass, one octave lower.



The following is selected from example 74, A, with mixed inversions which the pupil will figure, and then add the alto and tenor.

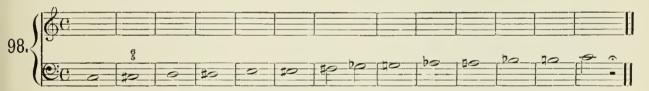


The following is selected from example 74, B. The soprano of that example is here converted into a bass. N.B.—The figuring of the bass will be occasionally omitted in succeeding examples



By way of exercise, the pupil may let the parts of the first two bars in this example *interchange*, as in example 95.

In the following exercise the soprano of example 82 has been converted into a bass, which the pupil will figure and then add the harmony.



As a few specimens of inverted basses given in the preceding examples will suffice to show how they may be employed, we shall proceed to explain

THE INVERSIONS OF THE COMMON CHORD.

This may be effected in a very few words; for, as the pupil is already acquainted with the *first* inversion of that chord, t it only remains to explain the *second*.

It is clear, that as the common chord contains only two intervals besides the bass, it can have only two inversions. In the following example, at 1, appears the fundamental chord.

At 2, the first inversion (6th), the third of the chord having been selected.

At 3, the second inversion (4), the 5th of the chord having been chosen as the inverted bass.



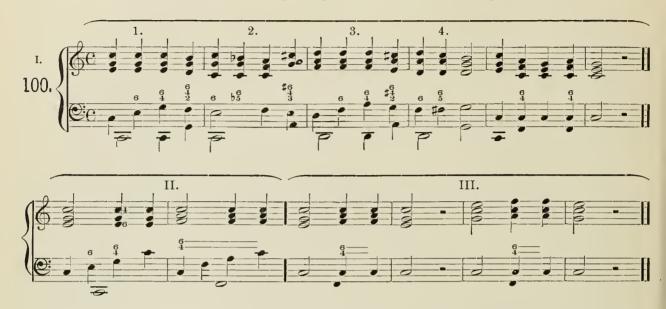
* When we modulate as in example 77, X, no inversions should be employed, because the effect produced by the fundamental bass will be more characteristic of the boldness which that modulation is intended to express.

The fundamental 7th may, on occasion, be permitted to ascend to the 5th of the following tonic. See Weber's Overture to Freyschütz—vivace movement, bars 37, 38, and 39.

† See example 90, bar 5, 7, 9, and 11, and explanation in page 65.

70 FIGURING.

It would be waste of time to enter more fully into an explanation of these inversions, after the exercises through which we have gone. The following example will suffice to show their practical use.



N.B.—The chords of the $\frac{6}{4}$, at I, are of doubtful origin, as shall be shown when we treat on discords by suspension. Those at II and III are perfectly legitimate

When we employ the first inversion of a *common chord*, it is not *absolutely necessary* to remove the 3rd from the chord, unless it affects the purity of the harmony. In the preceding example at 11, the 6th (*i.e.*, the original 3rd) is doubled. This doubling of the 6th arises from the resolution of the preceding chord; but it may also appear as at 4, where E, the 5th of the dominant chord, ascends to F.

HINTS RESPECTING THE FIGURING.

In figuring the first inversion, a 6 is sufficient, unless the 3rd with which it is accompanied requires an accidental. In that case, it is only necessary to place the accidental alone, in place of the figure 3, thus:—6, 6, 6.

b # p

The second inversion must always be figured $\frac{6}{4}$.

When accidentals are required, they are placed before the *figure*, in the same manner as they are placed before the *note*.

ON EMPLOYING INVERTED BASSES IN HARMONIZING MELODIES.

It has been already shown how *inversions* may be employed *in modulation*; it shall now be pointed out how these inversions may be employed in *harmonizing melodies*. In this latter, the pupil will not experience the least difficulty, provided he has paid strict attention to the former. He will immediately perceive that he is already in possession of all the essential matter here required. However, before we proceed, it will be necessary to recall attention to what has been said at page 33, and exhibited in example 58, A.

We there explained the *peculiar character* of each of the four parts, and how (from the application of the four rules of harmonizing*) they became *interchanged* among themselves, producing an agreeable diversity of effect; in which interchange, however, the bass *did not* participate.†

We will now take a melody and harmonize it with fundamental basses *only* — write the chords on an upper staff, leaving a blank staff for the inverted bass, add the 7ths to the dominant chords, and take care that they are properly resolved. (See example 102, I.)

Having harmonized the melody thus, our object is next to select from the harmony some of the intervals with which to construct a melody in the inverted bass. A few rules shall be given to assist the pupil in this selection; for the present it will suffice to direct his attention to the dominant chords *only*, because the resolution of the intervals of that chord will be quite sufficient to point out the path which the inverted bass is to pursue.

RULES FOR CONSTRUCTING AN INVERTED BASS.



RULE I.

(a) WHEN THE FIFTH OF THE DOMINANT CHORD IS IN THE SOPRANO, SELECT THE THIRD AS THE INVERTED BASS 6_5 .

This will produce a soprano progression in that part.

Rule II.

(¿) WHEN THE THIRD IS IN THE SOPRANO, SELECT THE SEVENTH FOR THE INVERTED BASS 4.

This will produce a tenor progression in that part.

RULE III.

(c.) WHEN THE SEVENTH IS IN THE SOPRANO, SELECT THE THIRD AS THE INVERTED BASS 5.

This will again produce a soprano progression in that part.

RULE IV.

(4) WHEN THE THIRD :S IN THE SOPRANO, SELECT THE FIFTH AS THE INVERTED BASS 4.

This will also produce a soprano progression in the bass.

Rule V.

- (c.) WHEN THE EIGHTH IS IN THE SOPRANO, SELECT THE THIRD.
- N.B. When the above rules cannot be employed, use the fundamental bass.

We shall now proceed to the construction of the inverted bass for the vacant staff in the next example at 11, by employing the first and second rules only.

* Pages 25 to 32.

[†] The pupil is strongly recommended to refer once again to what has been stated in the introduction to inverted basses (page 61): it will materially assist him in comprehending the subject upon which we are now about to enter.



The first chord is not a dominant chord — use the fundamental bass.

Second note: - What interval is in the soprano? The 5th.

Select the 3rd of that chord for the inverted bass; expunge B from the chord, and write it in the vacant staff, where it must ascend to C in the following chord. Soprano progression. (See example 87.)

Fourth note: - What interval is in the soprano? The 3rd.

Select the 7th (tenor progression); compare the harmony at I with that at II. The pupil will observe that the monotonous effect produced by the fundamental bass at I has, in some measure, disappeared at II, by the introduction of the first inversion $\frac{6}{5}$, and the third inversion $\frac{6}{4}$ with its resolution; in other respects, the harmony of the exercise remains as it was before.

We shall now harmonize another air, and introduce the third and fourth rules.



At a, the 3rd is in the soprano — select the 7th. 2nd rule.

b, the 7th ———— select the 3rd. 3rd rule.

c, the 3rd ———— select the 5th. 4th rule.

d, the 1st inversion of the common chord, arising out of the resolution of the preceding dominant chord.

At bar 4, the 7th is not introduced until the latter part of the chord.*

At bar 7, although the 3rd is in the soprano, we are not allowed to employ the 3rd inversion; because it is a general rule, that a composition should begin and end with the fundamental tonic chord; had the 3rd inversion been employed, the exercise would have finished with the chord of the 6th.

The pupil should now harmonize a few melodies, according to these simple rules; after which, he may venture upon a more extended field of operation as regards the construction of inverted basses.

Our constant desire is to produce variety; but as it is clear that a continued application of the preceding rules respecting inverted basses, however effective for the present, must *ultimately* produce a certain degree of monotony, we shall, in the following exercise, exhibit some specimens of the *variety* of ways in which the inversions of the *dominant* chord, as well as those of the *common* chord, may be effectively employed.

^{*} The reason of this will be more fully explained when we treat on periods.



Observation 1. — The soprano and bass, being the extreme parts of the harmony, are always the most conspicuous (that is, they are more easily distinguished than the inner parts); therefore to them are generally given those intervals which are considered to produce the best effect, or contrary motion. See bars 3, 9, 11, 14, and let the pupil well notice the gradual descending bass in bars 9, 10, 11.

- soprano progression

f, second inversion of the dominant chord, 6,

Observation 2.—At f, bar 3 and 11, the 5th is in the soprano, and, according to the first rule, the 3rd should be selected as the inverted bass, but, as that interval in its progression ascends, we have chosen the 5th for variety, by which not only a flowing melody is procured in that part, but also contrary motion.

Observation 3.— It has been shown, at page 24, in what part of the harmony the fundamental 7th may be introduced; the reason was there stated, also, why that interval could not be admitted at that time,

although the progression of the fundamental bass would permit its introduction; however, having now arrived at *inversions*, that interval may be very effectively employed, though its introduction can be considered only as by license; because the 7th, so introduced, will appear in a part of the harmony where the 3rd (its *proper* resolution) is not found, and which in such case will necessarily be doubled. See (f) bar 11, where D (the 7th) appears in the *tenor*, and resolves on C the 3rd; and as that C is found also in the soprano, the 3rd of the tonic chord is doubled. At bar 9, the licensed 7th appears in the inverted bass, and the 3rd is consequently doubled in *that* part and in the soprano.

Observation 4.— We are aware that the chord of the 6th (first inversion of the common chord) has heretofore arisen out of the resolution of the 3rd inversion of the dominant chord.* At bar 14, however, that inversion, in order to procure a flowing and melodious progression in the bass, has been introduced unconnected with the dominant chord.

Observation 5.—An inversion may be interchanged with another inversion, and thus produce a more melodious progression in the different parts; see bar 12, where the 2nd inversion is followed by the 3rd. Observe the interchange of intervals between the alto and bass.

It would be imprudent to enter here into all the minutiæ of this fertile subject; sufficient has been said to direct the intelligent student how to proceed; let him only harmonize and *reharmonize* Ex. 104, in the variety of ways with which he is already acquainted, and then his own experience will probably teach him more than all that could be said upon the subject.

Observation 6.—It has already been observed, that a strict adherence to the rules, as exhibited in Ex. 101, may occasionally be dispensed with, when it is our object to produce variety, contrary motion, or a more effective melody in the bass; however, when we do thus depart from the observance of these rules, a slight departure from the established progression of some of the intervals of the dominant chord will also take place. This will be evident by examining the following.



At a, 1st rule, all is right.

At b, the 5th is in the bass, and ascends. Here we have proceeded by contrary motion; but the 3rd in the alto must, in consequence, descend on the 5th of the following tonic, to preserve the harmony complete.

At c, the 7th is in the bass, for variety. The 3rd ascends, but the alto and soprano are doubled.

Observation 7. — A word concerning the 6th of the scale descending, when it is preceded by the 7th.

We know that the fundamental bass of the 6th of the scale is the subdominant; now were we to accompany that interval thus in descending, after having been preceded by the 7th, consecutive 5ths and 8ths would be the immediate consequence (as in the above example at d); to avoid this, the fundamental bass of the 7th of the scale, instead of descending from the dominant to the subdominant should ascend a whole tone to the relative minor of the key (as at e).

The following is a practical illustration of all the preceding observations.



At a (bar 1), the 5th in the soprano descends; we have selected the same interval for the inverted bass (second inversion), and have made it to ascend,* producing a good effect and contrary motion. Compare this with bars 11 and 17

At b, c (bars 5 and 6), the 7th of the scale descends to the 6th; we have, therefore, accompanied the latter interval by the relative minor of the key†; the same occurrence takes place at bars 13 and 14.‡

Let the pupil remember that, although our principal object in constructing an inverted bass is to produce a flowing and graceful melody in that part, as also an amalgamation of all the parts—yet the peculiar character of the bass, which consists in fundamental progression, must constantly be kept in view; see bars 5, 6, 7, 8, 9, 10, which are all fundamental progressions.

He is recommended to read the remarks which have been made at the end of the treatise on modulation by fundamental basses, page 47; and on all occasions to play what he may write; and in order to

^{*} See observation 5; also Ob. 2.

[†] See observation 7.

[‡] It will be perceived that on all these occasions a fundamental 7th has been introduced upon the dominant chord of Bb, as if it actually proceeded to its tonic; this may here be considered as rather premature, but it greatly improves the harmony, and win be fully explained hereafter. See False Cadences.

produce a variety of effect, he should arrange the same exercise in a variety of ways, of which a few specimens are given in the following examples. This, in fact, will constitute an elementary introduction to extemporary performance.

In the following example is shown how the three inversions of the dominant chord *only*, with its resolution, may be employed so as to produce variety.



It will be perceived that the melodies at bars 1, 2, 3, contain only two sounds each; but the *monotonous* effect of the harmony at bar 1, is removed at 2 and 3, by employing other inversions.

We shall now give an exercise in which will be found two distinct bass-parts to the same melody, where the above mode of selecting inverted basses is put into practice. Of course it is unnecessary to observe that these two inverted basses are two distinct exercises, and are not intended to be employed at the same time. Each of them should be taken separately, employing the same melody, and then adding the other two parts of the harmony.



On looking over the second bass part of the above example, it will be perceived, in the latter part of bar 2, that had the F# continued to the end of the bar, it must have ascended to G, producing consecutive octaves; instead of which, it first ascends to the 5th of its own chord, and then descends to G. Meanwhile the 5th, A, in the melody, also divides itself into two notes, and, instead of descending from A to G, in the next bar, it first proceeds to the 3rd (F#) which the bass has quitted, and afterwards ascends one degree to G. As the use of this interchange of intervals is of considerable importance, and as frequent reference will be made to it, we have been more than usually careful in directing the attention of the pupil to it; and to impress it still more upon the mind, we add the following:—



In the above example it will be perceived, 1st, that this interchange takes place during the continuance of the chord; 2nd, that the different intervals, after this interchange, wherever they may be found, proceed to their destination as pointed out by the resolution of the chord of the fundamental 7th. For instance, bar 1, the inverted bass, $G \sharp$, ascends to the 5th, B, and then descends to A; while at the same time the 5th, B, in the alto, descends to the 3rd, $G \sharp$, and then ascends to A.* Bar 2, the reverse has taken place. — Bar 3, the inverted bass ascends from the 3rd to the 7th, where it resolves into the 3rd; remark the progression of the soprano.

This may suffice to show the principle on which these interchanges are performed; we shall now harmonize a simple melody, to show their practical use and effect.



Bar 1, the bass interchanges with the alto; at 3 and 4, with the soprano.

N.B.—It is not absolutely necessary that on these occasions the *identical intervals* of the chord should interchange places:—see second part of bars 3 and 6.

It will now be necessary to make a few observations on the 2nd and 4th rules of harmonizing, in order to show how these rules may, under certain circumstances, be employed in a more extended form than heretofore.†

We are aware that "when the 4th of the scale descends one degree, it may be accompanied by the dominant;" we shall now add, that the 4th of the scale, although it may not immediately descend one degree (resolving upon the 3rd of the succeeding tonic chord), yet provided it proceeds to any of the other intervals of that chord before its final resolution, it may still be accompanied by the dominant.



- * The importance of this interchanging of parts will be still more evident when we arrive at passing notes.
- † See also retrospect, pages 34 to 36.

At a, the 4th of the scale, although it does not descend one degree, is still accompanied by the dominant; because it descends to the 3rd of that chord, and then resolves.

At b, the 4th has first descended to the 5th of the dominant chord; the inverted bass takes up the 4th of the scale, and descends one degree.

At c, the 4th has descended to the 8th of the dominant chord.

At d, the 4th has first ascended to the 8th of the dominant chord, returned to its place, and then proceeded according to the original rule.

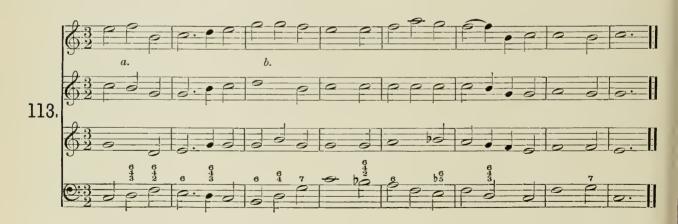
OBSERVATION ON THE FOURTH RULE OF ACCOMPANYING THE SCALE.

The rule says, "when the 5th of the scale is *repeated*, it may be accompanied by the dominant." Under certain circumstances, however, that interval may be so accompanied when it is *not* repeated; as in the following example:—



It will be remembered that this rule, as well as the others, was given to produce variety of effect; it was to remove monotony in the harmony; the very expression, "when the 5th is repeated," shows the nature of the rule. It is evident also that, were the rule in the original form continually to be applied, the very evil which we desire to prevent must inevitably make its appearance. This will be readily comprehended by those who have carefully reflected upon the preceding matter.

The following example will exhibit in a practical form what has been stated respecting the extension of the second and fourth rules of harmonizing.



At a, second rule. At b, fourth rule.

The example which here follows may be considered as a specimen of the various ways in which an inverted bass may be constructed, and the four rules employed.



If each of the above bass parts be taken as a separate exercise, and the alto and tenor added (see example 108), the pupil will then be able to judge of the difference of effect, arising not only from the rules for the choice of inverted basses, but also from the four rules of harmonizing (see pages 28 to 31).

Too much attention cannot be paid to what is here noticed, as it is only by comparison and a strict attention to the difference thus produced that the judgment can be exercised and formed and the taste improved.

The preceding exercise should not be regarded as merely technical, but also as intellectual; for example, here is a simple melody, it has no claim to beauty, elegance, or expression, as to its progression or rhythmetical form: this melody, however, becomes the prolific source of others;* each of which, in its turn, may also become the source of many more, and so on ad infinitum. When this fact presents itself to our mind, that all this can be effected through the instrumentality of only three chords, and these produced by nature, a wide field, indeed, is open for reflection.

To give examples of all the variety which these rules so abundantly supply, would be quite impossible; we shall only remark in conclusion, that if the pupil keeps in mind the original principle of fundamental basses,—from whence they have emanated,—the four rules of harmonizing (as arising out of the dominant chord), the variety of effect produced through their instrumentality—their modulation (that inexhaustible mine of musical wealth!) the introduction of inversions (causing an amalgamation of the four parts, by which a new character is infused into the whole harmony); furthermore, if he reflects that the originating cause of all this can be traced to the simple vibration of a string, etc.,—that it is not the invention of man, but the simple operation of nature; he cannot but perceive that the matter, thus considered, is of a higher order than the mere putting together of a few chords for the purpose of gratifying the ear. He will find that, abstractedly considered, it is a subject perfectly capable of creating a real and absolutely intellectual enjoyment.†

^{*} Mark the three inverted basses, which may all become bass melodies, and then be reharmonized.

[†] It wild be seen how much more our ideas on this subject will be enlarged when we arrive at modulation by the intervals of a melody.

AN ESSAY

ON

DISSONANCES BY SUSPENSION.*

HITHERTO we have employed only such harmonies as are derived from the common chord, and the chord of the fundamental 7th; we shall now proceed to introduce some intervals which do not form any part of that harmony.

In order that the pupil may have a clear view of the subject on which he is about to enter, it is necessary that he should take a retrospective view of the several processes by which the variety of effect, up to the present time, has been accomplished. Thus:—

He must have perceived, after the discovery of the fundamental basses,† that the harmony arising from them consisted of *common chords only*;‡ that this harmony was afterwards enriched by the fundamental 7th; and that thus (another interval being added to the harmony) a *new* effect was produced.§ He must have observed that the four rules of harmonizing, || modulation, inversion in modulation, ¶ and, last of all, inversions in melodies,** all formed a chain of causes and effects, unbroken by a *single link*; and that all this resulted—*not* from a theory suggested by *man*—but from a system founded in *nature*, as exhibited in example 63.

It shall now be shown how a *new* effect may be introduced into the harmony, by means altogether differing from those which have been hitherto employed for that purpose.

We have already stated that our harmony up to the present time has consisted of *common* chords, and the chord of the fundamental 7th, with their inversions, and our experience has sufficiently shown the variety which these chords alone, by a judicious management, are capable of producing; yet, as the constant recurrence of these (however diversified or dissimilar in their progression) must ultimately tire the ear, means have been found to remedy this defect by introducing intervals into the harmony, which *do not* constitute either a portion of the common chord, or that of the fundamental 7th.

We shall endeavor to illustrate this by the following example:—

Suppose we were required to harmonize the melody as at I. According to the first rule of harmonizing it would appear as at II; and, if it were played thus, the ear would rest *perfectly contented*. Not so at III. Why? Because the sound G, at bar 1, instead of immediately descending to F, is continued in bar 2, and the ear experiences a certain degree of disappointment—a degree of pain—it desires to hear the F, and when the F at last arrives, a certain degree of pleasure is experienced; which, although purchased at the expense of a little pain, we have no objection to experience again on the same terms.



* Dissonances by retardation shall be explained hereafter.

† See page 10. † Page 15. § Pages 18 to 23. | Pages 25 to 31. ¶ Pages 62 to 79. ** Pages 72 to 79. (80)

The interval which produced this effect is called a dissonance,* and the chord to which it is attached a discord.

When an interval of a chord is thus kept back in a gradual descending progression, as at III, we shall call it a suspension, or a dissonance by suspension; for example:—

At III, as G suspends the 8th (F), we shall call it the dissonance of the 9th.

as F _____ 3rd (E), it will be the dissonance of the 4th.

as E _____ 5th (D), it will be the dissonance of the 6th.

These comprise all the dissonances by suspension.

The following example exhibits the discord of the 4th in its different positions, produced by suspending the 3rd: -

At a, the dissonance is in the soprano.

At c_{i} -



The discord of the 9th, in its different positions, is produced by suspending the 8th, thus: -



The discord of the 6th, by the suspension of the 5th, in its three positions:



It will be perceived, that in example 112 B (III), the sounds which produce the discords present themselves naturally in the progression of the descending scale; they are first heard as consonances, after that as dissonances, and then (after having descended, or, in other words, proceeded to their respective places from which they had been detained) again form consonances. From this circumstance arises the

* The intervals of a common chord — 3rd, 5th, and 8th — are called consonances; any other interval, therefore, is a dissonance. N.B. — We are not here speaking of intervals arising from inversions.

RULE FOR THE PREPARATION OF DISSONANCES.

(A.) In whichsoever of the four parts a dissonance appears, in that part also it must first be heard as a consonance. Or, in other words, thus: In whatever part the interval appears which is to be suspended, in the same part also must be prepared the dissonance which suspends it.

RESOLUTION OF DISSONANCES OF DISCORDS.

(B.) In whichsoever part the dissonance appears, in that part it must descend by one degree into the same consonance, which was suspended.*

This is called the resolution or resolving the dissonance.

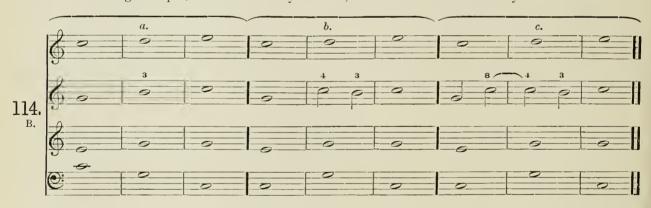
For instance, in the preceding example 113 B.

At I, α	the dissonance of	of the 4th is prep	ared in the so	oprano by the	STD <	a <i>consonance</i> , and reso into the 3rd in the same p	
Ь			al	lto ——			
С			——— te	nor —			
II, a		9th	— in the so	prano ——	5th, -	Sth	
В			al	lto ——			
С							
III, α		6th	— in the te	enor —	3rd, -	5th	
Ь			so	prano ——			
С			al	to ——			

DISSONANCES BY SUSPENSION IN THE ASCENDING SCALE.

Were we to introduce dissonances only when the scale or melody gradually descends, the above rule for the preparation of dissonances would be quite superfluous; but, as this is not always the case, we shall now, instead of taking the descending scale, employ the ascending, in which dissonances will not be found naturally prepared.†

In the following example, at a, the harmony ascends, and consists of concords only:—



At b, the dissonance of the 4th is introduced in the alto.

Q. Why in the alto? A. — Because the 3rd, into which it resolves, is found in that part. See A, page 82.

Q. Is it here prepared? No.

At c, the dissonance is prepared in the *same* part where it afterwards resolves. In order to obtain this preparation, we have divided G (the semibreve of the preceding chord) into two minims, and have allowed it to ascend to C (the 8th), as the proper preparation of the dissonance of the 4th.‡

All the above observations as to preparation, etc., etc., apply equally to the other dissonances.

* This rule admits of a slight exception, which shall be explained in its proper place.

† Dissonances which are naturally prepared in the ascending scale are called retardations, which will be found 'ally explained hereafter.

‡ See A, page 82.

The nature of dissonances having now been explained, it shall be shown how and where they can be introduced; and let it be well kept in mind, that, in doing this, we are to be guided solely and clone by the progression of the fundamental bass.

We shall commence with

THE DISSONANCE OF THE FOURTH.

(C.) When the fundamental bass ascends a fifth, or descends a fourth (which amounts to the same*); the dissonance of the 4th may be introduced, prepared by the 8th, and resolved into the 3rd.

In order that the pupil may have a correct idea of the preparation and resolution of *this* dissonance, and the manner of employing it effectively, we shall for the present deviate a little from the plan hitherto pursued; and, instead of harmonizing an air, we will select that progression of fundamental basses which will admit of its introduction in a regular and unbroken series.

The following example at I., exhibits a continued progression of basses, 5ths ascending, or 4ths descending.



To which, at II., common chords or concords have been added. This we shall call a consonant harmony or harmony of concords, in contra-distinction to that which is produced by a progression of dissonances, called dissonant harmony, or a harmony of discords.



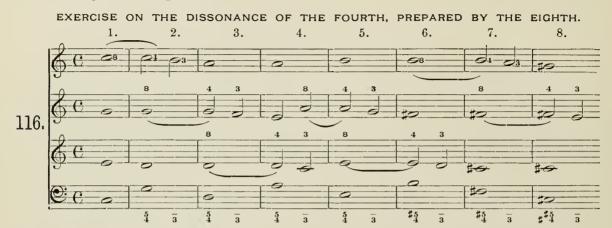
The chords having been written as in the above example,‡ and the 3rd of each chord particularly distinguished by the figure 3, the pupil must examine the progression of the bass, reasoning thus:—

The bass proceeds from C to G (ascending a 5th), consequently, I may have the dissonance of the 4th.

Here he should write the figures $\frac{5}{4}\frac{1}{3}$, or simply 43, the figure 4 representing the dissonance, and the figure 3 its resolution.§

- * In order to avoid mistakes and repetitions, with regard to the progressions of the fundamental bass, on these occasions, we shall always say, the bass ascends a 5th, although the bass may in reality descend a 4th, because ascending a 5th or descending a 4th produces the same note.
 - † See example 113 B, I.
 - ‡ In writing the chords, the pupil must avoid all skipping.

From G to D, a 4th descending; from D to A, a 5th ascending. Thus, let him go through the entire exercise, and figure the bass accordingly. He may then proceed to introduce the dissonances, as in the following example, reasoning thus:—



- Q. Here (pointing to G, bar 2) I can introduce the 4th; but in which of the four parts should I write it?
 - A. Where the 3rd (its resolution) is found; namely, in the soprano, bars 2 and 7.

For the same reason the dissonance must be written in the alto at bars 3 and 8, and in the tenor at 4 and 6.

Observe, that in bars 2, 3, 4, 6, 7, 8, the dissonances lie already prepared, in the same part where the resolution is found, because the *melody descends*; but at bars 4 and 5 the case is different, the melody ascends; the alto, therefore (in order to prepare the dissonance), is obliged to ascend in bar 4 to the octave.*

Let the pupil now write an exercise himself, as here pointed out, the chords of which may either be major or minor, or a mixture of both.

N.B.—A progression of fundamental basses ascending uninterruptedly by 5ths (or descending by 4ths), will conduct us through all the keys with sharps; and if no enharmonic change is introduced, will necessarily carry us as far as the key of B #.†

The pupil is strongly recommended to play these exercises, carefully observing the different effects produced between the *consonant* and *dissonant* harmony; and, by way of exercise, to take the fundamental basses of melodies already harmonized, write the chords to them as pointed out above, figure the bass, and then introduce the dissonances where the progression of the bass will admit of it.

To show the importance of the dissonance of the 4th, and the value of the simple rule by which we introduce it into *practical* composition, we shall here exhibit a few specimens in three parts.

EXEXCISE, SHOWING HOW THE DISSONANCE OF THE FOURTH MAY BE EMPLOYED FOR THE PURPOSE OF IMITATION.‡



* See example 114 B, c.

† N.B. - Not by modulation.

† To the professor. — We feel, however, that, in doing so, we are rather travelling out of our usual simple course.

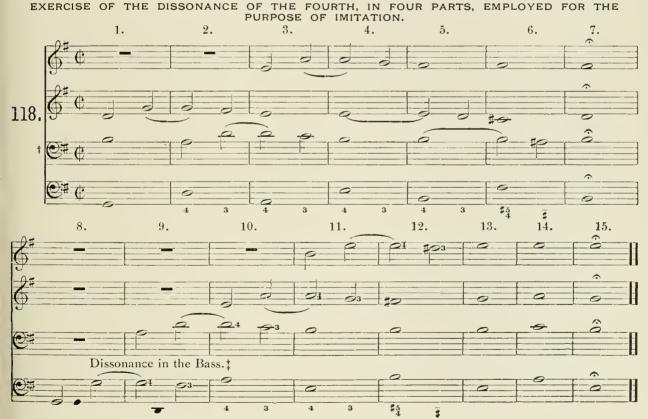


At bar I the soprano ascends to G, to prepare the dissonance at bar 2, where it resolves into the 3rd. The soprano continues thus to prepare the dissonance until it arrives at bar 7, where the strain ends in B minor.

Now let us observe that, while the soprano ascends in bar I to G, to prepare the dissonance at 2, the alto performs a similar operation by ascending in bar 2 to D, to prepare the dissonance at 3; and, while the soprano thus continues to prepare and resolve the dissonance, the alto proceeds in a similar manner, and follows the soprano a 4th lower,* until at the 7th bar, as has been stated already, the strain ends in B minor.

At the 8th bar, the *alto* commences and continues the same melody which the soprano commenced at bar 1, and the soprano takes up the subject of the alto at bar 9. The soprano now continues to follow the alto a 5th higher as far as the 13th bar, where, by a few modulations, the harmony is carried back to the original key.

We shall here exhibit the same exercise in four parts, where the tenor participates in the imitation.



^{*} When two or more parts move thus, it is called *Imitation*. When each part is imitated as above, it is called a canonical imitation or canon. The first seven bars contain a canon in the 4th below, and from the 7 to the 13th, a canon in the 5th above.

[†] To prevent leger lines, the tenor part is here written in the bass clef.

[‡] To be more fully explained by and by.

This will suffice to show what may be effected by the simple rule, viz.. When the fundamental bass ascends a 5th, etc., etc. We shall now proceed to the introduction of

THE DISSONANCE OF THE NINTH.

(D.) When the fundamental bass ascends a 4th (or descends a 5th), the 9th may be introduced, prepared by the 5th, and resolved into the 8th.

As this is the *same* progression which is required in *modulation* (viz., from dominant to tonic), we shall make a few modulations for the purpose of introducing this dissonance.

EXERCISE ON THE DISSONANCE OF THE NINTH, PREPARED BY THE FIFTH.



At a, the *tenor* proceeds from the 3rd to the 5th of the chord* to *prepare* the 9th, which appears at b, where it resolves into the 8th.

Q. Why does that dissonance appear in the tenor? A. Because its resolution is found there.

At c, the soprano has ascended to the 5th of the chord to prepare the 9th, which appears at d, and resolves into the 8th.

At e, the alto performs the same process.

As the bass at g has ascended a 5th, we introduce a 4th, prepared by the 8th.

N. B. — It will have been remarked, that where the 3rd ascends to the 5th of the chord, to prepare the 9th, the first inversion, $\frac{6}{5}$, is employed to preserve the harmony complete.

We shall now return to our three original fundamental basses, and harmonize the ascending and descending scale, introducing both the 9th and 4th wherever the progression of the bass will permit.

ASCENDING AND DESCENDING SCALE, WITH DISSONANCES OF THE FOURTH AND NINTH.



The Fund. Bass is occasionally represented by the dots.

^{*} Let it be kept in mind that the intervals are here always counted from the fundamental bass.



From a to b, from d to e, from i to k, from n to o, and from o to p, the basses ascend by 5ths; consequently the 4th prepared by the 8th may be introduced.

From b to c, from c to d, from e to f, from g to h, from m to n, from p to g the basses ascend by 4ths; consequently the 9th is prepared by the 5th.

Q. The bass, at h. has ascended a 4th; why have we not introduced the 9th?

A. As a dissonance is the representative of the consonance into which it subsequently resolves, it is clear that the consonance and the dissonance which suspends that consonance cannot be permitted to appear at one and the same time; we must, therefore, be very careful, when the 9th, for instance, is introduced in one part, that the 8th does not appear in another part of the same chord at the same time. This remark, of course, applies to all other dissonances whatsoever; see x, where the suspension of the 8th in the alto, and the octave in the soprano appear on the same chord at the same time.

Q. Why has not the 3rd of the dominant chord. at p, ascended?

A. For the same reason as stated already; in order to make room for the 9th,* the 3rd in this instance has been permitted to descend to the 5th of the tonic.

We shall now introduce

THE FUNDAMENTAL SEVENTH, COMBINED WITH THE DISSONANCES OF THE NINTH AND FOURTH;

Preparatory to which, it will be necessary to point out some peculiarities concerning these dissonances worthy of observation.

1st. — The fundamental 7th is derived from *Nature*, and therefore requires no preparation. (See example 63.)

2nd. — Dissonances, being artificial, must always be prepared.

3rd. — The fundamental 7th does not resolve upon the same bass.

4th. - Dissonances do resolve upon the same bass.†

The fundamental 7th partakes of the nature of a consonance as well as of a dissonance.

As a consonance, requiring no preparation. As a dissonance, requiring to be resolved.

DISSONANCE OF THE FOURTH, PREPARED BY THE FUNDAMENTAL SEVENTH.

The fundamental 7th, therefore, considered as a *consonance*, may prepare a *dissonance*; that is, the 7th, before resolving into the 3rd, may be *suspended*, producing the dissonance of the 4th; and thus when the bass proceeds from the dominant to its tonic, the dissonance of the 4th may be introduced, prepared by the 7th.

In order to exhibit this dissonance in a practical form, we shall again make a few modulations.

- * When we arrive at ascending dissonances, called retardations, these licenses (as they are called) will be dispensed with.
- † Exception to this rule shall be shown hereafter.

EXERCISE ON THE DISSONANCE OF THE FOURTH, PREPARED BY THE FUNDAMENTAL SEVENTH.

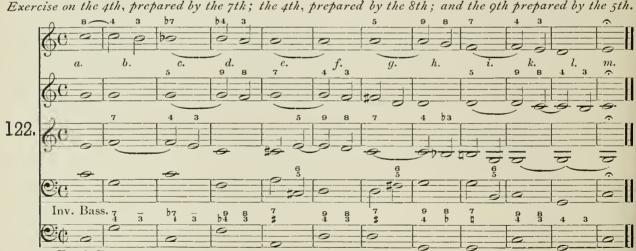


At a, the 7th has prepared the 4th in the tenor, which at b, resolves upon the same bass into the 3rd At c, that dissonance is thus prepared in the soprano; at e, in the alto; and at g, in the tenor.

The pupil is recommended (by way of exercise) to make a few modulations,* introducing the dissonance of the 4th, thus prepared by the fundamental 7th.

If we examine examples 119 and 121, we find that the progression of the bass in modulation (from dominant to tonic) is the same as ascending a 4th; and hence it follows that both these dissonances, viz., the 9th prepared by the 5th, and the 4th prepared by the 7th, may be introduced conjointly upon the same bass, thus forming a progression of

COMPOUND DISSONANCES OF THE FOURTH AND NINTH.



Fund. Bass.

At b, bass ascends a 5th, dissonance of the 4th prepared by the 8th, in the soprano.

At c, bass ascends a 4th, or from dominant to tonic; the 4th prepared by the 7th.

At d, both dissonances appear in the soprano and alto.

At f, in the alto and tenor.

At h, in the soprano and tenor, etc.

^{*} See Part III, on Modulation.

Observe the *interchange* of intervals between the *tenor* and *inverted* bass at e, between the *alto* and *inverted* bass at g, and between the *tenor* and *inverted* bass at i.

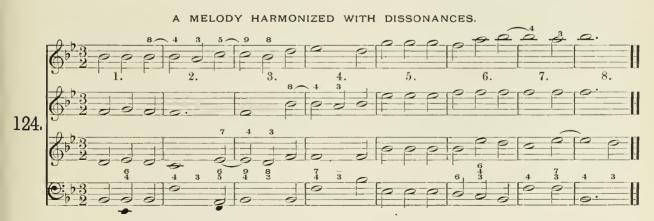
The following is an example of accompanying, on the pianoforte, a harmony comprising discords; it contains all the harmony of the preceding example, and the pupil is recommended to play it.

N.B. — The figures point out the preparation and resolution of the dissonance.

It will be observed that some of the intervals of the chords in the bass are *doubled*; in so doing, however, care has been taken that none of them, thus introduced, appear as suspensions elsewhere in the harmony.*



In the preceding examples, it will have been noticed that a particular progression of the fundamental bass has been especially selected for the purpose of introducing the dissonances; that object having been effected, we shall now return to our original plan of harmonizing a melody; and then (guided by the progression of its fundamental basses) introduce such dissonances as those progressions will admit of.



^{*} See Obs. page 87, and x, at the end of example 120.

The consecutive 5ths, between the tenor and bass, and the consecutive 8ths, between the alto and bass, as the harmony proceeds from bar 5 to 6, are avoided by the bass moving by contrary motion, that is, the bass DESCENDS, while the other two parts ASCEND.

We shall analyze the foregoing exercise by a few interrogations.

- Q. (Bar 2). By what rule are you enabled to introduce here the dissonance of the 4th?
- A. Because the fundamental bass ascends a 5th.*
- Q. Why does the dissonance appear in the soprano?
- A. Because the 3rd of the chord (its resolution) is found there.†
- Q. (Bar 3). By what rule have you here introduced the 9th, and why does it appear in the soprano?
- A. Because the fundamental bass there ascends a 4th, consequently I can introduce a 9th; ‡—it must appear in the soprano, because its resolution (the 8th) is found there.
 - Q. On what principle have you introduced the 4th in the same bar, for the bass does not ascend a 5th?
- A. Because F, the *dominant*, proceeds to its *tonic* (Bp), we can have a 7th. This 7th prepares the 4th (in bar 2), and is resolved, in conjunction with the 9th (in bar 3).
 - Q. But how can the 7th, which partakes of the nature of a dissonance, prepare a dissonance?
- A. Because the fundamental 7th partakes of the nature of a consonance too, as it requires no preparation; \$ the fundamental 7th may, therefore, prepare a dissonance.

DISSONANCE OF THE SIXTH, PREPARED BY THE THIRD.

The pupil is aware that, when the fundamental bass ascends a 5th, the dissonance of the 4th may be introduced. It shall now be shown that, when the bass ascends thus, the dissonance of the 6th may likewise be introduced; consequently both these dissonances may be employed conjointly.

In the following example at a and c is exhibited the simple dissonance of the 6th, prepared by the 3rd, and resolved into the 5th, as already shown at page 82; at b and e, both these dissonances appear conjointly.



The above exercise is a *practical illustration* of the manner in which these discords may be employed with the best effect.

It has been shown, and cannot too strongly be impressed upon the mind of the pupil, that the introduction of dissonances are in every case regulated by the progression of the fundamental bass; and, in order that he may see the utmost extent to which a dissonant harmony may be carried, we shall here give an example which exhibits every progression of which the fundamental bass is capable, and, consequently, every dissonance by suspension that can be introduced into harmony.



^{*} See page 83, C.

§ See page 87

|| See page 83, C; also page 82.

[†] Page 82, B.

[‡] See page 86, D.

a, when the fundamental bass ascends a	2nd, the	9th prepared by the 3rd. 4th ——————————————————————5th.
b, ———————	3rd,	6th ———— 8th
c,	4th, —	9th — 5th. 4th — 7th.
d,	5th, —	6th 3rd.
e,	6th,	No dissonance.
f,	7th, —	6th ————— 5th. 4th ————— 3rd.
N.B. Ascending a 7th, or descending a 6th, 5th,	and)	J
6th,	· 3rd } amo	ount to the same thing.
5th,	- 4th)	

It appears by the above example at f, that when the bass *descends* a 2nd, we can introduce the 9th, 6th, and 4th. But it is only the 4th that can in this instance be permitted to appear legitimately; for, as the suspension is the representative of the consonance into which it resolves, it is manifest, were we to prepare the 9th by the 8th, that the ear, anticipating the resolution, would be impressed with the approach of consecutive octaves, for instance:—



At a, in the above example, we find consecutive octaves; at b, 9th prepared by the 8th, — can this be permitted? at c, consecutive 5ths; at d, 6th prepared by the 5th — can this be permitted? at e, consecutive 3rds; at f, 4th prepared by the 3rd — this is perfectly correct.

The following exercise is a melody harmonized with dissonances; and, if the soprano be sung or played, the inner parts may be considered as an accompaniment.



At a, the chord of the $\frac{6}{4}$ appears by *inversion*, and at b and d, by suspension *; at e, the 9th is prepared by the 5th; at f, g, prepared by the 3rd.†

^{*} See example 133, a, b, and explanation.

92 ACCENT.

It will be necessary, before we pursue our subject of dissonances further, to make the pupil acquainted with what is called the

ACCENTED AND UNACCENTED PART OF A BAR.

To enter fully on this matter at present would be out of place; all that is necessary for our purpose now to state is, that in a bar of common time, whether it contains two minims, two crotchets, etc., or their equivalent, the first part only is called *accented*, and the second half *unaccented* (as in the example I). When a bar contains three minims, three crotchets, etc., or their equivalent, then the *last* portion is called *unaccented* (at II).



It is a general rule, that dissonances should be prepared on an *unaccented* part of a bar (example 130, a), appear on the *accented* part (b), and be resolved on the *unaccented* (c), and that the note which prepares the dissonance be at least of the same duration of time as the dissonance itself.*



It is necessary to observe, that these rules have reference chiefly and primarily to compositions of the old school, the *strict style*, as it is called † (in contradistinction to what is called the *free style* ‡, the latter of which does not demand a very close observance of them. The following example is an illustration.



Here, although the dissonances are prepared on the *unaccented* part of the bar, and by notes of equal duration with the dissonances themselves, yet they do not (except at the 5th bar) resolve (strictly speaking) on the *unaccented* part of the bar.

The following example exhibits a still stronger illustration of what has been stated, for, at bars 1 and 3, the 6th is prepared upon the accented (instead of the unaccented), and is struck on the unaccented, (instead of the accented) part of the bar.



^{*} Never were there rules which admit of more exceptions, or are less regarded, especially in the composition of modern music, than the above.

† Church music, fugues, etc.

[†] Modern music in general, sonatas, concertos, songs, etc.

This deviation from the strict rule of preparation and resolution of dissonances, may be considered as the medium between the strict and free * styles of writing.

From what has been shown above, it is clear that there are two chords of the \(\frac{6}{4} \), one arising out of the second inversion of the common chord,\(\dagger and another out of suspensions.\(\dagger They may, however, be easily distinguished, as the former requires neither preparation nor resolution, and the latter requires both. This distinction is clearly demonstrated in example 133, where at \(a \) the chord of the \(\frac{6}{4} \) by inversion (being derived from a concord) prepares the discord of the \(\frac{6}{4} \) at \(b \); and thus the nature of each chord, and its origin, is immediately discovered.

As frequent opportunities will hereafter present themselves for illustrating this subject, we shall at once proceed to the *inversions of discords*; and let it be observed, if the pupil has well understood and practised what he has learned of inversions (as previously explained), he will not experience the slightest difficulty in comprehending the subject upon which he is now going to enter.

With respect to the *figuring* of the inverted bass with dissonances, the pupil is advised to read with attention what is stated at pages 96 and 97 on that subject.

We shall select the ascending and descending diatonic scales for our next exercise, presupposing that the pupil himself has harmonized it with inverted basses, that he has carefully examined the *progression* of the fundamental basses, has ascertained where dissonances may be introduced, and figured the basses, as shown in all the preceding examples; then let us ask the following questions.



- Q. What dissonance can we introduce in the second bar?

 A. The fourth.
- Q. Why? A. Because the fundamental bass ascends a fifth.
- Q. In which of the four parts must the dissonance appear?

 A. In the *inverted* bass.
- Q. Why? A. Because the third of the chord is there.
- Q. How has the 4th been prepared?

 A. By the octave in the preceding chord.
- Q. Has the 4th resolved properly? A. Yes; it has descended into the 3rd \(\) of the chord.
- Q. How has the 4th been prepared in bar 4? A. By the fundamental 7th in the preceding chord.
- Q. From where have you that 7th?

 A. G, the bass, is the dominant to C, and thus a 7th may be introduced at 5; the dissonance appears again in the inverted bass at 8 in the tenor, prepared by the 7th.
- Q. Why has the 4th *not* been introduced at bars 3 and 6, as the progression of the fundamental bass would permit?

 A. Because the 3rd of the chord is in the soprano; and were we to suspend it in the tenor (where, in fact, that dissonance would be prepared by the 7th), then the 3rd, as well as its suspension, would be heard together.

Let the pupil now introduce the dissonances into the descending scale.

^{*} The free style even admits dissonances of every description unprepared, although they are generally resolved.

[†] See example 99.

[†] See 126, d.

[§] See page 82, B.

^{||} See example 121.

[¶] See page after example 120, x.



In the above exercise, bar 3, the dissonance of the 9th is prepared by the 3rd; and at 4 and 7 the dissonance of the 6th is combined with the fundamental 7th. This mixture of dissonances is very effective.

That the *dissonance* and the *consonance* which it *suspends* must never be heard together, has been stated more than once; nevertheless, as an error in this particular is easily committed when dissonances are introduced into inverted basses (especially when a licensed 7th is employed), the pupil is advised to pay great attention to the faulty progressions which are exhibited at c, e, g, and h, in the following exercise.



At a, a licensed 7th appears in the tenor; which, at b, has descended into the 3rd, and thus far all is correct; but at c, that 3rd is suspended, while, at the same time, the 3rd is heard in the soprano. At d, the 5th is in the tenor, and descends into the 8th, as it ought; but at e, the 5th, instead of descending to the 8th, suspends that interval, while the soprano has ascended to it, and thus the 9th and 8th are heard together. At f, all is right; but at g the 3rd appears in the tenor, while the inverted bass suspends it at the same time. At h, licensed 7th in the inverted bass, 3rd in the soprano — wrong.

The following melody is harmonized with various dissonances: —



In oar 4, the alto, after having resolved the 9th, ascends immediately to the 5th to prepare the 9th in bar 5. This ascending to the 5th was a necessary step, as the melody ascended.*

^{*} See example 114 B, and observations.

At bars 7 and 9, the 4th is prepared by the 5th. Why? Because the fundamental bass ascends a second.*

At bars 7 and 9, the fourth is prepared, but the 6th is *un*-prepared; this progression is called a cadence, which will be found explained at example 138, c.

N.B.—It would tend very much towards the improvement of the pupil (not merely as it regards dissonances, but in other respects also), were he to re-harmonize the above exercise, without dissonances or inverted basses, proceeding after that to add the inverted basses and dissonances, and then to compare his own production with the original exercise.

We shall now (at least for the present) discontinue to harmonize melodies with dissonances, and proceed through a short course of modulation, into which they shall all be introduced; preparatory, however, to this, it will be necessary that the pupil be made acquainted with a certain progression of chords called a cadence, which, when heard at the end of a composition, or judiciously interwoven with modulation, is calculated to conduct the ear gently to a state of repose.

There are several species of cadences; the most simple of these is -

THE PERFECT CADENCE,

When the chord of the fundamental 7th, or dominant chord, proceeds direct to the tonic.

All the others may be considered as auxiliaries, preparing the way, and leading to this, by which a final close is ultimately effected.



At I, is exhibited a perfect cadence, with which the pupil is fully acquainted (excepting, perhaps, only the name).

It must have been observed, that by a continued course of modulation the ear is kept in a constant state of excitement, approaching absolutely to a painful sensation, so that it becomes desirous of rest. To stop suddenly, however, upon any tonic, or key, at which we may have arrived, would be anything but satisfactory; therefore, when we may have modulated to any key, and desire to come to a decided and satisfactory close, there the ear must be gradually prepared and soothed into a quiescent state, by the introduction of a few chords, so constructed that they shall not only have a tendency to conduct to a state of rest, but shall also be calculated to produce a strong impression of the key in which it is intended the close shall take place.

The only chords suited for this purpose are those of the subdominant and dominant, for it will be found that these chords, together with that of the tonic, embrace all the intervals of the diatonic scale, so that, in fact, by hearing these three chords at the close of a modulation, we receive an impression of every interval of the key in which we thus desire to conclude. The above cadence, at α , is a specimen.

However, as a frequent recurrence of these chords would produce monotony, the dissonance of the 4th is introduced (as at δ), which, in some measure, removes this objection.

On account of the frequency of the final cadence, composers have not only been induced to seek for every possible variety, but sometimes have even endeavored to avoid it.

^{*} Example 126, a. † Example 141, bars 1, 2, 3. † Ditto, bar 41. § Ditto, bars 12, 13.

^{||} From this circumstance have arisen those cadences called false, imperfect, etc., all of which shall be explained in their proper places.

In seeking for this variety, some liberties have been taken; for instance, the dissonance of the 6th has been introduced unprepared, producing thus the discord of the $\frac{6}{4}$ (c). Another liberty was subsequently taken with the chord of the subdominant, by adding to it the 6th, and calling it "the chord of the added 6th," * omitting the chord of the $\frac{6}{4}$ altogether, as in the following example 139 (d).



N. B. — The 5th in the chord of the added 6th is generally prepared, as if it were a dissonance. Sometimes the 5th of the subdominant chord is omitted, and the added 6th doubled (e); and sometimes the octave is employed instead of the 5th (f). N. B. — When the key is minor, then the chord of the subdominant must be minor too (f, g).

FIGURING INVERTED DISSONANCES.

Having explained the nature of such cadences as are immediately necessary for our purpose, we shall now show their practical use in a course of modulation, in which shall be introduced every dissonance, as exhibited in example 126.

A few hints respecting the proper figuring of inverted basses when dissonances are introduced, as also the principle upon which this figuring is established, shall first be given; and to this it is requested the pupil will pay strict attention.

First of all, let him remember that, besides the bass, there are only *three* intervals which form the common chord, 8, 5, 3; and as each of these intervals, in its progression, may be suspended, it is clear that there can be only three suspensions, viz., 9th, 6th, and 4th; that all dissonances by suspension (in whatever form they may appear) are comprised in the above.

The 8th, suspended by the 9th, which may be prepared by any consonance except the 8th.

5th, ———— 6th, prepared by any consonance but the 5th.

From this view of the subject, it is evident that, were no other than fundamental harmonies employed, the figures exhibited above, together with the fundamental 7th, would suffice to express every chord required in harmony.† But, as these chords may be inverted,‡ it follows, when an inversion takes place, that the name, as well as the figures of the original intervals, § must be changed also; and were we to employ no dissonances, then the figures which are required for the purpose of expressing the three inversions of the fundamental 7th, and the two inversions of the common chord, would suffice to express every chord in music; || but, as the intervals which arise from inversions may be suspended, it follows that the suspensions must necessarily require to be figured also.

Under these circumstances, it is evident that an entirely new kind of figuring would become necessary; and chords, the figuring of which in their simple inversions were easily understood and as easily remembered, would now become so complicated and involved, that unless some means were found to remedy this evil, great embarrassment would be the consequence. To this end it was found advisable to figure the dissonance only, and then to extend lines back over the bass from those figures the intervals of which remained unsuspended, and thus the inversion of the chord, in its simple state, would instantly be recognized. We shall 'llustrate this.

^{*} The pupil must not consider this chord as the first inversion, &, of the fundamental 7th.

[†] See page 67.

‡ See Inversions.

§ Intervals of the fundamental bass.

| The chord of the fundamental 9th excepted, which shall be explained in its proper place.



In bar 1 is exhibited a modulation from C to A minor by the *first* inversion. Here we have introduced the dissonance of the 6th,* but (in consequence of the inversion) it requires to be figured with a 4, and thus the chord would require to be figured $\frac{6}{4}$, quite a new chord to all appearance; however this ambiguity is prevented by the mode alluded to.

At 2 we have the second inversion of the dominant chord, in which we have introduced the dissonance of the 4th, which (in consequence of the inversion) is figured 7, thus $\frac{7}{3}$, another apparently new chord, would be presented, but avoided as in the example.

At 3, 4, the dissonance is in the bass, and therefore its resolution only requires to be figured. Some composers do not express this chord by lines, but figure the dissonances from the bass $\frac{5}{2}$, $\frac{5}{4}$.† Both methods are here exhibited.

At 5, we have the same modulation and dissonance as at 1; here, however, the dissonance is found in the bass. This chord would require to be figured thus, $\frac{5}{3}$; another *new* figuring which is avoided as in the example.

What has been said as regards the *method* of figuring the above dissonances, when inverted, may be applied to all the other dissonances when inverted.

With these few observations, we now present the pupil with the following exercise, in which he will find much useful matter and practical information. Let him make it a matter of study, and then play it: above all, let him examine most *minutely each progression* of the fundamental bass, for by it the whole mass of harmony is guided and directed. Let him remember that it is by this means, and *this alone*, that he can clearly understand the matter contained in this and all preceding exercises, and thus be enabled hereafter to put into practice that knowledge which he has already acquired, and which, perhaps, will at a future time be to him an inexhaustible source of enjoyment, gratification, and delight.

Very few of the inverted basses are figured; *this* the pupil (we believe) will be able to accomplish himself, from the previous information afforded upon the subject, especially as the fundamental basses are figured throughout.



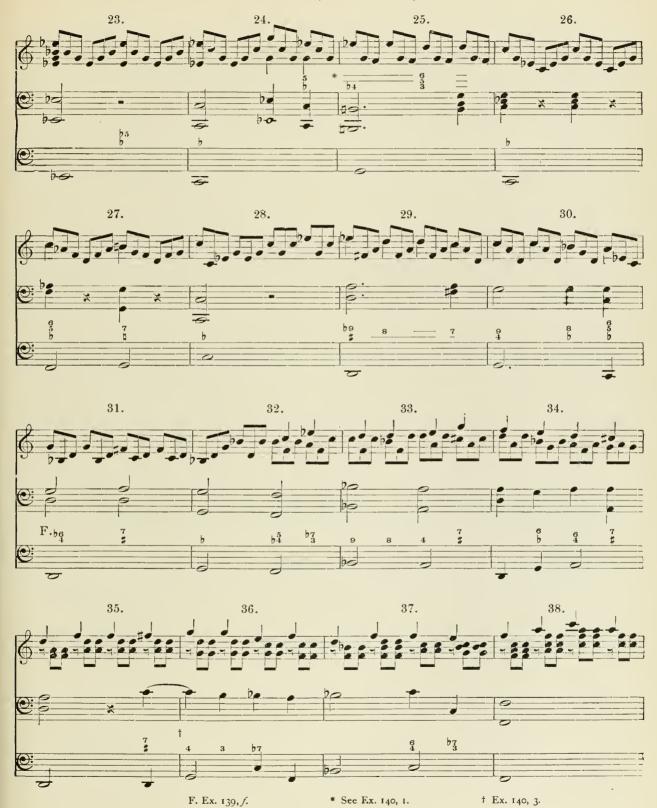
The letters refer to cadences.

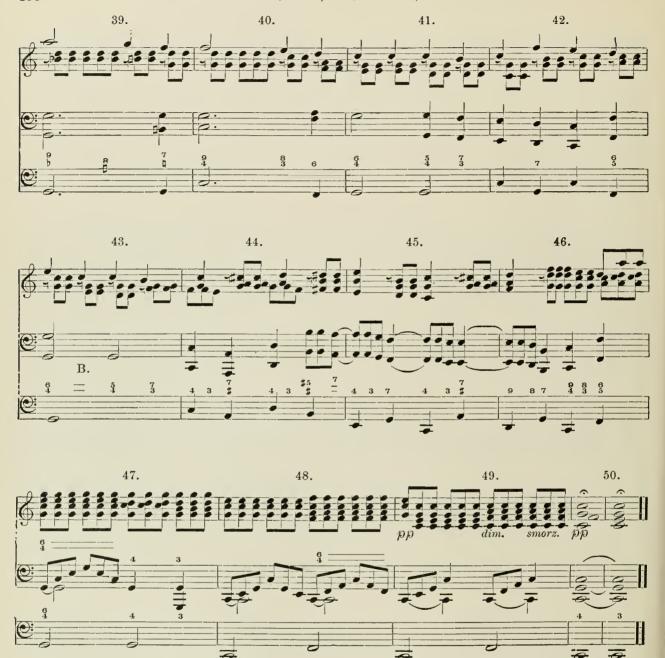
A. See Ex. 138, a.

† See example 134, bars 2, 5.

[•] Q. Why? A. Because the fundamental bass ascends a 3rd.







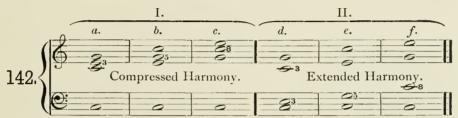
B. Ex. 138, b.

EXTENDED HARMONY.

It will have been observed that hitherto our harmonies have been written so that between the soprano, alto, and tenor, no space was left for the introduction of any other part.

A harmony thus constructed we shall call

COMPRESSED HARMONY.

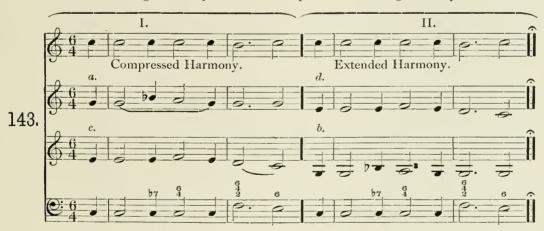


If we examine the three positions of the common chord (at I.), we find that in the *second* position of the chord (a), the 3rd is placed immediately under the 5th; in the *third* position (b), the 5th is immediately under the octave; in the *first* position (c), the octave is immediately under the 3rd. If, however, we remove the 3rd from the chord at (a), and place it an octave lower (as at d., II.), we shall find that the alto (at a) has changed place with the tenor (at d);—that is, the note which was the tenor (at a) occupies a place next the soprano (at a). If we remove the 5th of the chord (at a), and write it an octave lower (as at a), a similar change takes place; and so with the octave (at a and a).

This new arrangement of intervals of the chord we shall call

EXTENDED HARMONY,

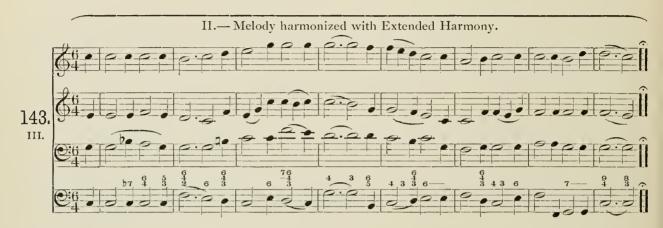
By which a new and striking effect is produced. Compare the following harmony at I. and II.



In the preceding Ex. (at I.) is exhibited *compressed harmony*, as usual, which (at II.) appears *extended*; the original *alto* (at I., a) is transferred an octave lower to the *tenor* (at II., b); and the original tenor (c) simply becomes the alto (at d).

The effect produced by the *new* distribution of the two parts will be better understood by playing the alto and tenor together without the other parts, first as at I., and then as at II.; but that the pupil may still

more clearly comprehend the nature of extended harmony, let him harmonize the following exercise (143, III) in compressed harmony, and play it, then play it in extended harmony as it now stands, and compare the different effects: this is the only legitimate way of forming a correct judgment, and it cannot be too carefully studied.*



N.B. As the alto, when transposed thus an octave lower, is rather too *low* to be written in the *treble* elef, it will be more convenient (in order to avoid ledger lines) to write that part, at least for the present, in the bass clef, as in the example.†

We shall now suppose the pupil engaged in harmonizing a melody in compressed harmony, which he intends shall subsequently be changed into extended harmony; in this case, the two following rules must be carefully attended to.

FIRST, "THE BASS PART MUST NOT APPROACH THE ALTO NEARER THAN AN OCTAVE."

otherwise, the *alto*, when transposed into the tenor (an octave lower), will be found *below* the *bass*; and thus the *tenor* will in fact become the *bass*. This is clearly shown in the following example, where the bass (in the compressed harmony at a) is *nearer* than an octave to the alto; in consequence of which, the tenor (at a) is found below the bass (at b), and the harmony (as far as regards its inversion) changed.



^{*} A melody harmonized with extended harmony may be played by two performers on one pianoforte, producing the effect of a quartet.

[†] It may be here noticed that almost all our modern arrangements for soprano, alto, tenor, and bass, are confined to the two clefs, soprano and bass.

By this interchanging of parts, it is evident that a 4th must become a 5th; therefore in the *compressed* harmony observe this

SECOND RULE, "CONSECUTIVE FOURTHS MUST BE AVOIDED."

for, when the harmony is afterwards extended, these consecutive 4ths will become consecutive 5ths, which are not allowed.

For example:— at c (compressed harmony), are consecutive 4ths, which, at d (extended harmony), become 5ths.

The improper progression (in the present instance) arises from having selected the *third* inversion of the fundamental 7th as the bass. By employing the second inversion (as at e), this faulty progression is avoided (as at f).

If the pupil carefully attends to these *two rules*, he may, without the least apprehension of making mistakes, reharmonize his former exercises with extended harmonies, and thus produce new and unexpected effects.

Several other advantages result to us from this extension. For example: when a melody ascends or descends by great intervals (as in the following example at a), the skipping of the chords, which naturally arises from compressed harmony, is not only avoided by a partial extension (as at b), in the following example, but a smooth and flowing progression of the inner parts is obtained; the superior effect of which, when contrasted with that at (a), needs scarcely be noticed.

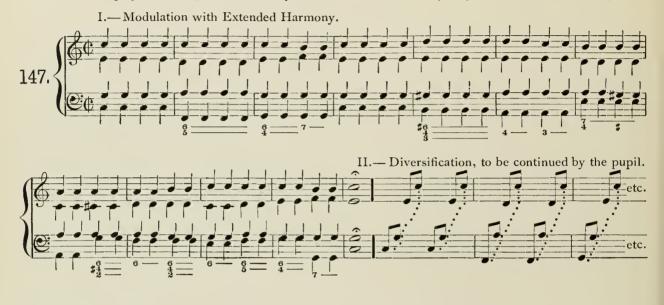


When the melody falls by a great interval (as at a, in the following example), the alto, in order to obtain a smooth progression, is permitted, but sparingly, to cross over the soprano (as at b).



This will suffice to show the nature of extended harmony, and its application; and whether we employ it to prevent skipping, or for the purpose of interchanging the parts (as exhibited in Ex. 143), it will be found a most important auxiliary. The best advice that can be given the student, in order to make himself fully and practically acquainted with the extraordinary diversity of effect thus produced, is to reharmonize his

former productions with extended harmonies, and then to play them.* A few modulations written by him thus (as in the following Ex. at I), and played, will be found exceedingly useful; particularly so, if they are first written and played in compressed harmony. This extended harmony may be diversified, as at II.†



MAJOR AND MINOR.

It has already been stated that a major key stands closely allied to another called its "relative minor"; and that it is by the 3rd of a chord we discover whether it is major or minor.

If we carefully examine Ex. 63, we shall find that the harmonics there exhibited, as they arise from the vibration of a string, do not produce a minor but a major chord.

We shall now proceed to explain the Minor Scale.

THE MINOR SCALE.

ITS ORIGIN, CONSTRUCTION, AND HARMONIES.

This will be found a most interesting subject, inasmuch as it opens to our view a new and unbounded field of harmony. It is true the student is not altogether unacquainted with the nature of *minor* chords as regards modulation; but it is only when major and minor chords are employed conjointly in harmonizing melodies that their effect can be fully appreciated.

The major scale is derived from nature, as already shown; but the *minor* scale is partly *artificial*; it is evident that a *union* of these two scales must produce an effect altogether different from that which has hitherto preceded, and of which the pupil is not at present capable of forming an adequate conception.

The minor scale, then, as already said, is partly *artificial*; but, in explaining its construction, we shall, as much as possible, keep in view, and take for our model, the major (or original) scale as produced by nature.

^{*} See note †, page 4.

[‡] Page 38, Ex. 61.

If we examine the scale of three sounds in Ex. 65, we find that the third or last sound is the same as the 3rd of the chord of its *generator* (as appears also in the following example at a).

As the tonic chord * has a major 3rd, and as the third sound of that scale is a repetition of the 3rd of the tonic chord, the scale is major.

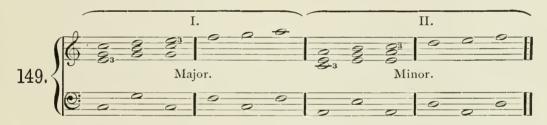


Should we give the tonic chord a *minor* 3rd (as at b, large notes), then the scale, according to the above principle, will be a *minor* scale; for the third sound in *that* scale is a repetition of the 3rd of the tonic chord.

"MINOR SCALE OF SIX SOUNDS."

In constructing this scale, we shall pursue the same principle as that by which we were enabled to construct the major scale.†

The following example (at I) exhibits the *major scale* as we *first* discovered it, and in which all the chords are *major*; but at II, the chords are all *minor*, the effect of which (when compared with the original scale at I) is very far from being satisfactory.



Let us try whether we can modify this scale so that, although we can retain the impression of the minor key, we shall still in some measure keep in view the principles by which the major scale was established. In order to effect this object, it will be necessary that we change one of the minor chords, at II, into major; but, as the *first* and third chords *must* be *minor*, it is clear that the second chord *only* can be made *major*, see (a) in the following Ex.; that the second chord is the one which ought to be major is evident also from its being the dominant proceeding to its tonic, and necessary to establish the key.



Having arranged the harmony of the first scale of three sounds according to this principle (as at a), the second scale must be arranged exactly in the same manner (as at b). Thus, by a union of the two scales (at a and b), a scale of six sounds with its proper harmonies is produced.

^{*} The first chord of a scale is called the tonic chord.

[†] See page 42.

Here, however, we find that a modulation to D minor has taken place; and, as we modulated to that key by its dominant A, so we must modulate back to the original key of A minor by its dominant E, and we are furnished with the two last intervals of the scale of A minor, viz; $G \# \text{ to } A^*$, at the same time clearly showing the reason why from the 6th to the 7th of a minor scale must be a *tone and a half*. Thus, then, we have a complete scale, artificial in its construction — inasmuch as it is composed of major and minor chords.



If we examine the preceding minor scale, we find that the second, fifth, and seventh, are accompanied with major chords—characteristic of the major scale; and, as the basses of these chords are dominants, the fundamental 7ths are added.†

If it should be asked, Why is the fundamental 7th not added to the third chord, k, that bass being dominant to D? we answer, it is true A is dominant to D, but because the 3rd is minor, it is not a dominant chord (for every dominant chord requires a major 3rd), and consequently the fundamental 7th cannot be added. Not so at x, for there the chord is major, and the 7th may be added.

If we further examine this *minor* scale, we find that the distance between the 2nd and 3rd, 5th and 6th, 7th and 8th, are *semitones*, and between the 6th and 7th a *tone and a half*. These are all distinguishing characteristics of the minor scale, but especially the progression between the 6th and 7th; the wailing and melancholy effect thus produced is peculiarly suited to express deep sorrow and grief. The 6th of this scale is sometimes raised a semitone, to avoid this progression of three half-tones; but is it not thus deprived of one of its most essentially characteristic beauties? and is not also the preponderance of minor chords weakened, by one more than necessary being made major?

Having now explained the minor scale on fundamental principles, we shall take that scale and its harmony (as it appears in the last example) for our guide, and harmonize a melody according to its principles; preparatory to which, it is only necessary to state that the rules are (with very few exceptions) the same as already taught in the preceding part of the work; that is to say, the four rules of harmonizing, the adding of dissonances, etc., etc., are all applicable here; the only additional rules refer to those parts of the scale which require major chords, as follow:—

"THE SECOND AND SEVENTH OF THE SCALE MUST ALWAYS BE ACCOMPAINED WITH MAJOR CHORDS."

"THE FIFTH OF THE SCALE MAY BE ACCOMPANIED WITH EITHER MAJOR OR MINOR."

With respect to the accompaniment of the 5th, some judgment and caution are necessary; because, as the *fifth* of the scale and the *fifth* of the tonic, or key chord, are the same intervals, a mistake in the selection of the harmony of that interval, with reference to major or minor, might easily be committed; however, by a little reflection and practice, this may hereafter be effectually avoided. For further explanation the pupil is referred to Ex. 164.

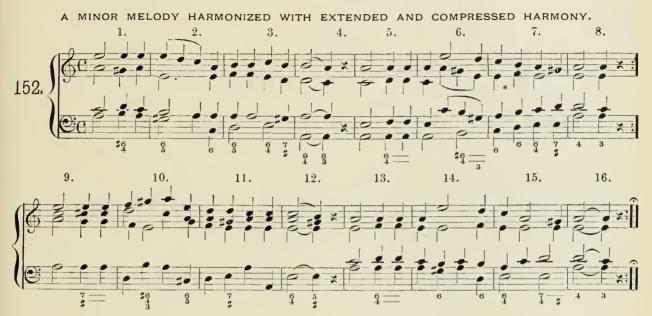
^{*} The pupil is strongly advised to read very carefully what has been stated upon that subject at page 43.

t See page 22.

[†] See pages 13, 25, 28, 30. We are desirous to draw the attention of the student to these four rules of harmonizing, in order that he may see their applicability to the harmonizing of minor melodies.

It must not be expected that *minute* directions will be given how the pupil should proceed on all occasions; that would indeed be impossible; he must put into practice the knowledge he has acquired, and exercise his own ingenuity; if he does so, and carefully examines the exercises with which he will be furnished as he proceeds, it will be a wonder if he misses his way.

The following is an illustration of what has been stated, and we will analyze it.

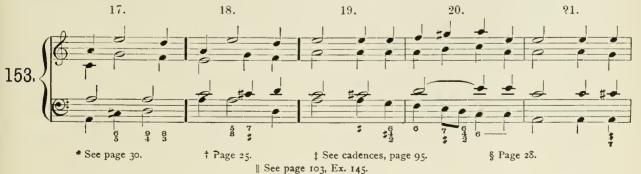


The exercise commences with the 5th of the scale, which must have a minor chord; why it must be thus accompanied requires no explanation. N.B. As the 5th is here repeated, we have employed the fourth rule of harmonizing.* At 2, the second rule has been introduced,† because the fourth of the scale descends one degree. Bars 3, 7, 15, cadences.‡ At 4, dissonance of the $\frac{9}{4}$. At 5, the octave being repeated, the third rule is employed.\(\frac{9}{4}\) At 6, the fifth accompanied by a minor chord. Why? Because the second part of the minim is accompanied by the fourth rule, which requires a major chord; had the fifth been accompanied by a major chord, then two major chords would have followed each other in immediate succession, which for the present should be avoided.

At 9, a 7th by license is introduced in *compressed* harmony; at 10, the harmony is *extended*, to prevent skipping. By the introduction of this licensed 7th, the harmony of the succeeding tonic chord is, of course, deprived of its 5th; which, however, is amply compensated by the *effect* produced by the 7th. Compare the effect produced at bar 5 in *extended* harmony, with 13 in *compressed*.

The attention of the student is particularly directed (at 10) to the progession from F to G#; the peculiar effect this progression produces has already been alluded to in Ex. 151.

It has been generally remarked, and with great truth, that *one* example often effects more towards elucidating a subject than pages of explanation; we shall, therefore, give a few specimens, showing how certain portions of the preceding melody may be variously harmonized; more especially with regard to the *accompaniment* of the fifth of the scale, as exhibited in the following example:—





Bar 17. The fifth of the scale accompanied by a major chord. Compare this harmony with bar 6.

Bar 18. The fifth accompanied first by a minor, and then by a major chord. Compare as above.

Bar 20. In order to preserve a flowing melody in the bass, the 7th in the tenor is permitted to ascend. This liberty, however, must be used sparingly. Compare the progression of the bass at 19 and 20 with that of the alto, 21, 22.

These specimens also exhibit several modes of extending the harmony. It will be observed that, in bars 22, 23, 25, it is extended beyond the limits pointed out in Ex. 143; nevertheless, it may be employed thus with very great effect. Compare these specimens from bars 19 to 20 with bars 9, 10, 11.

To enter into a full explanation of these various specimens would only tend to frustrate our design, which is, that the student should examine and judge for *himself*, and become practically acquainted with *that* which no specific rules can ever convey:—viz., *general effect*.

Let it be observed that no *new* rules have here been introduced; all has been effected by the simple application of the "four rules of harmonizing," with which the student was before familiar.

We shall now proceed to introduce a most important chord in harmony, viz.: the chord of the minor ninth.

THE CHORD OF THE MINOR NINTH.

It will be in the recollection of the student, that when we explained the resolution of the chord of the fundamental 7th,* we were particularly anxious to draw his attention to two intervals of that chord: viz., the 3rd and 7th; the former of which ascended a semitone direct to the octave of the tonic, while the latter descended a semitone to the 3rd of the succeeding chord. It is a fact worthy of notice, that when these two intervals are heard together, in the situation represented at (a) in the following example, an immediate and powerful tendency to attract each other is manifested between them. †



When these two intervals, however, are placed in a reversed position (as at b), then how opposite the effect! no sympathy is manifested between them; no desire to approach each other; indeed a contrary feeling is exhibited,—a desire to separate; to fly off in opposite directions.

It is by these two intervals, ascending and descending by semitones, that the whole mass of harmony is guided and directed. †

* See page 20, also 33.

† The truth of this observation will be attested by every intelligent vocalist and performer on wind and string instruments (not the pianoforte).

Now let the student mark well — when the 7th descends a *semitone*, the chord into which it descends will be a *major* chord (a, b); but, when the 7th descends a *whole tone*, the chord into which it descends will be a *minor* chord (c, d).

In this latter case, it is evident that, in consequence of the 7th descending a whole tone, the equilibrium which subsisted, as it were, between these two parts before, is now destroyed; and, in order to restore it, some other interval must be found, by which this object shall be accomplished; in other words, an interval must be added to the chord of the fundamental 7th, which (while the 3rd ascends a semitone) shall descend a semitone; and as the 7th in the first instance indicated the approach of a major chord, so the interval sought for shall be calculated to indicate the approach of a minor chord.

Here the question arises, — where, and how, shall we find this interval? — We answer, — by applying once more to that inexhaustible fountain from which we have obtained all our previous knowledge.

In examining Ex. 63, we find that the harmonics of the generator produce not only a *common* chord,* the chord of the *fundamental* 7th, and a scale with its fundamental basses, but the chord of the fundamental 9th also; and this 9th, let it be well observed, is a *major* 9th. See the following Ex. 155 (a).

The student is requested to pay particular attention to what follows.

That nature furnishes a *major* chord, and that a major chord may be changed into a minor by lowering its 3rd a half tone, has already been shown:† now (referring to the following Ex.) let us proceed upon the same principle with the 9th; and, as we have lowered the THIRD of the common chord a semitone, and made it *minor*, let us lower the NINTH a semitone and make it likewise *minor* (b); it will then descend a *semitone* upon the 5th of the tonic (c) while the 3rd ascends a *semitone* to the octave, and thus the equilibrium of these two intervals in their progression is preserved.

The whole of the chord of the minor 9th is exhibited at d. It will be observed that at a the major 9th descends into the 5th a whole tone, while the 7th descends but a half tone, producing a major chord; but that at d, while the major 9th descends a half tone into the 5th, the 7th descends a whole tone into the 3rd, producing thus a minor chord.



Having fully explained the nature of the minor 9th, and from whence it is derived, and having shown the *necessity* of its introduction, we shall now proceed to point out —

"HOW TO PRACTICALLY INCORPORATE THE MINOR NINTH WITH THE CHORD OF THE FUNDAMENTAL SEVENTH."

As the *minor* 9th will be found a *major* semitone § above the octave, it is only necessary to *remove the octave*, and insert in its place a note a major half tone higher, and *that* note will be the minor 9th. As this minor 9th, like the fundamental 7th, requires no *preparation* | we shall call it

THE FUNDAMENTAL MINOR NINTH, T

which may be introduced into any dominant chord.

- * A major chord (let it be remembered), not a minor.
- † Page 37. ‡ See Ex. 63.
- § A note, raised or lowered a semitone without changing the name of that note is called a *minor* semitone. A note which changes its name when thus raised or lowered, is called a *major* semitone.
 - || Thus it may be easily distinguished from the dissonance of the 9th by suspension, which requires preparation.
 - ¶ Or chord of the minor 9th, the fundamental 9th, or simply the minor 9th, by which the whole chord is to be understood.

At e in the following example, II., is the chord of the fundamental 7th; the octave is marked to be expunged.

- f. The minor 9th is inserted in its place.
- g. The minor 9th is resolved, descending a semitone, into the 5th of the following chord.
- h. The chord in different positions.
- i. The 9th is resolved on the same bass into the octave, like a dissonance by suspension.



As the minor 9th resolves into the 5th, another *dissonance* of the 6th presents itself, prepared by the 9th; the rule for which is:—

"WHEN THE FUNDAMENTAL BASS ASCENDS A FOURTH, THE DISSONANCE OF THE SIXTH, PREPARED BY THE NINTH, MAY BE INTRODUCED."

See the following example at a; and, as the same progression of the fundamental bass admits of the 4th prepared by the 7th,* these two dissonances may be combined as at b.



Before we proceed to the *inversion* of the fundamental chord of the minor 9th, the student is recommended to exercise himself on that chord, by modulating through all the *relative minor keys*; a specimen of which is given in the following example. Previous to entering upon that exercise, however, a few preparatory questions like the following will be found useful.

- Q. How do you discover the minor 9th?
- A. The minor 9th is found a major semitone above the octave.
- Q. What is the minor 9th to G? A. A flat.
- Q. Why is it not G sharp? For G sharp and A flat are represented by the same key on the pianoforte?
- A. Because G sharp is not a major semitone above G, but only a minor semitone; it would be a sharp octave to G.
- Q. What is the minor 9th to B flat? A. C flat.
- Q. What——G sharp? A. A natural.
- Q. What _____ D sharp? A. E natural.
- Q. What—— E flat? A. F flat.

MODULATION THROUGH THE RELATIVE MINOR KEYS WITH THE MINOR NINTH.

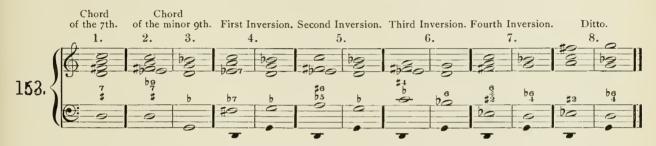


A modulation, such as the above, consisting entirely of *fundamental* chords of the minor 9th, is not very grateful or soothing to the ear; quite the contrary, indeed; but, when judiciously introduced, these chords produce effects quite electrifying.

INVERSION OF THE CHORD OF THE MINOR NINTH.

As the chord of the fundamental 7th contains three intervals besides the bass, and may, therefore, be inverted three times,* so the chord of the fundamental 9th, because it contains four intervals beside the bass, may be inverted four times.

It is necessary to observe that any inversion of the fundamental 7th may at once be convert d into an inversion of the minor 9th by merely removing the interval which represents the octave, and wr ing in its place a note a major half tone higher, as in the following example.



At I, the chord appears as the chord of the fundamental 7th, with the octave D to be expunged.

At 2, the octave is expunged, and the 9th, E flat, written in its place; which 9th resolves on the 5th of the following tonic chord

At 4, this chord appears in the *first* inversion. D, the octave (which would here appear as a 6th), is expunged, and the minor 3 w put in its place, which, in consequence of the *inversion*, requires to be figured with a 7. The chord is called the *diminished* 7th.†

N.B. Had the minor 9th not been introduced, it would have been the chord of the 6.

At 5, is exhibited the second inversion, \$6.

N.B. Had the 9th not been introduced, it would have been the chord of the 43.

At 6, the third inversion. $^{\sharp_4}_{b^3}$ or $^{\sharp_6}_{b}$.

N.B. Without the 9th, it would have been #42

At 7, fourth inversion. As the 9th itself is in the inverted bass, we need only figure the original 3rd, thus: #2 (sharp 2nd), as at 8.

Having now shown the *four* inversions of the chord, it will be necessary to make a few observations spon each of them.

OBSERVATION I.

As the essential intervals of the fundamental 7th are the 3rd and the 7th,‡ so those of the minor 9th are the 3rd and 9th; § by these two latter intervals we are always enabled clearly to distinguish the chord of the fundamental 7th from that of the minor 9th and its inversions; nevertheless, the fundamental 7th must not be omitted when we write that chord; for, the omission of that interval would deprive the 'ollowing tonic chord of its 3rd.

OBSERVATION II.

The 3rd and 9th must therefore be continually kept in view, and, under whatever figures these two intervals may be represented in the various inversions, they are at once recognized; for, the 3rd will always require a mark of *elevation*, such as a sharp or natural, and the minor 9th one of *depression*. In one word, these two intervals are always marked by accidentals of an *opposite nature*, which can never occur in an

^{*}See Inversions.

[†] Because this 7th is one semitone less than the fundamental 7th. N.B. This chord has been most unaccountably mistaken for a fundamental chord. See page 108, minor 9th, and Ex. 154.

inversion of the fundamental 7th, and therefore *must* always be figured; the other intervals of the chord need not be figured, unless they require accidentals; for instance, in the preceding example, at 4. *first* inversion, the original 3rd, F sharp, is in the inverted bass; all, therefore, that is required is to figure the 9th, which is here represented by a \$7.

At 5, second inversion, the #6 represents the original 3rd, F sharp; and the \$5 represents the original 9th, E flat.

At 6, third inversion, the #4 represents the original 3rd, F#, and the \$\dar{\psi}\$, the original 9th, E flat.

At 8, fourth inversion, the \$2 represents the original 3rd, F sharp; and the inverted bass that of the oth, E flat.

We shall now illustrate what has been said on the preceding examples, by giving separate exercises on each of the inversions.

EXERCISE ON THE CHORD OF 'THE DIMINISHED SEVENTH.



It will be observed that, at bars 4 and 5, the 9th, instead of descending into the 5th of the succeeding tonic, descends into the octave on the same bass; and thus the chord of the minor 9th is changed into the fundamental 7th.* See Ex. 155, II, i.

N.B. This exercise, as well as the following, the student is advised to play.

At II, the same exercise with extended harmony. The tenths between the tenor and bass produce a good effect.

N.B. The tenor from 2 to 3 has ascended, by which the 3rd of the chord is doubled, which produces a good effect, especially in a minor key.

At III, the same exercise diversified, which the pupil is required to finish himself, and then play.

* Partaking of the character of the 9th by suspension.

N.B. It is necessary to observe, that an *imperfect* 5th is always allowed to *precede* or *succeed* a *perfect* 5th in consecutive progression; the law is only against a consecutive progression of *perfect* 5ths. Let this be well kept in mind. The consecutive 5ths between the tenor and bass, therefore, in the above Ex. (x) are permitted; this may, however, be easily prevented, as at y and z.

EXERCISE ON THE SECOND INVERSION OF THE MINOR NINTH.



In the above Ex., the 5th (B) in the inverted bass, bars 1, 2, instead of descending as usual, ascends, to prevent the appearance of consecutive 5ths between the tenor and inverted bass.

EXERCISE ON THE THIRD INVERSION OF THE MINOR NINTH.



The only observation which we shall make upon the preceding exercise is that, at bar 1, the note B, the original 5th, but here the 6th from the inverted bass, instead of descending upon A, the octave, ascends in bar 2, to E, the 3rd of the bass.* By thus proceeding, the 3rd of the inverted bass is doubled, which produces a very good effect. Let the student write this exercise in extended harmony and play it. The commencement of it is as follows, at II, to which the student may add such dissonances as he finds most effective.

EXTENDED HARMONY.



^{*} This process may always be adopted when the dominant chord is in the 2nd position, and the 3rd inversion employed.

EXERCISE ON THE FOURTH INVERSION OF THE FUNDAMENTAL NINTH, OR SHARP SECOND.



At a, the 9th being in the inverted bass, resolves, of course, upon the 5th of its tonic (b), and produces the second inversion of that chord, $\binom{6}{4}*$. At c, we have the $\sharp 2$ again; here, however, the 9th resolves into the octave. When the chord of the $\sharp 2$ resolves into the $\binom{6}{4}$, it produces the effect of the $\binom{6}{4}$ by suspension, which is not very satisfactory. The following example shows several modes of avoiding this.



In the preceding Ex. 163, I. at b, the *resolution* of the chord $\frac{6}{4}$ is treated as an *unprepared*; discord by suspension. At c, nearly so; because the $\frac{6}{4}$ is *not* resolved upon the *same bass*, but is immediately followed by an inversion. At d, another method.

We shall now introduce the student to the fifth and last rule of harmonizing.

FIFTH AND LAST RULE OF HARMONIZING.

"WHEN THE SIXTH OF THE SCALE DESCENDS ONE DEGREE, IT MAY BE ACCOMPANIED BY
THE DOMINANT, TO WHICH IT WILL BE A MINOR NINTH §."

When the above rule is employed, the 5th of the scale, whether preceding or succeeding that interval must be accompanied with a *minor* chord. See a, b.

^{*} See Ex. 158, bars 7 and 8.

[†] See N.B., page 113.

[‡] See Ex. 133.

[§] This rule could not be introduced sooner, as it is founded upon the chord of the minor 9th.



In like manner should the fourth of the scale, in descending, be accompanied by the dominant, then the *fifth* of the scale immediately preceding that interval must also have a minor chord, c.

When several intervals of the chord of the tonic immediately succeed each other in a melody, they must all be accompanied by minor chords (d); and it would, therefore, be incorrect to accompany the 5th as at e^* .

N.B. When the fourth rule of harmonizing is employed (which we know refers to the 5th of the scale), that interval may be changed into the 6th, and then accompanied by the fifth rule. For example, the key A is minor, the 5th of the scale is E; and, as that 5th is repeated, we have accompanied it according to the fourth rule, † viz., by the dominant (See Ex. 163, II., 1). At 2, however, we have changed the 5th (E), previously accompanied the dominant into the 6th (F), and then accompanied it according to the fifth rule. At 3 and 4 is exhibited a similar process, which is preferable to the first.

Let us now harmonize a few melodies in minor keys.

In order to show the variety which may be produced in harmonizing even by the chords of the tonic and dominant only, when aided by the minor 9th, the following melody is constructed so that *no other* harmony is required but what arises out of the progression of these two chords (as will be seen by the fundamental bass), assisted by a few dissonances which naturally present themselves in the course of that progression.



* See page 107 — Observation on the accompaniment of the 5th in minor scale, and Ex. 152. † See page 30.

‡ In bars 3—7 we have employed first the 8th and then the 9th, by which a more melodious harmony is produced in the tenor. In example 160, and others, we permitted the minor 9th to descend into the octave; here this progression is reversed. At bar 9, the minor 9th in the alto descends to the 8th, while the 8th in the tenor ascends to the 9th. These interchanges among the parts never fail of producing a good effect.

Bars 2, 11, the fifth rule of harmonizing is introduced. The melody at 7 and 8 in the soprano is imitated in the bass, at bars 8 and 9.

Bars 9 and 10 in the alto are imitated in the bass, 15, 16.

Bars 9 and 10 in the tenor are imitated in the soprano, 15, 16.

The dissonance of the 4th, bar 2 (tenor), combined with the *minor* 9th in soprano (arising out of the fifth rule) will be found very effective. The gradually *descending* progression of the alto from the 9th to the 10th bar, while the tenor thus *ascends* to the 9th, is very effective, and produces two melodies, which are subsequently imitated by the soprano and bass (bars 15, 16,). At 15 is the fourth inversion of the minor 9th.



This example (166) exhibits the second part of the preceding melody, and is so constructed as to admit the harmony of the *subdominant*; which will be found a great addition to the general effect.

In the latter part of bar 19, the 5th of the scale is accompanied by a major chord; and, as it thus becomes a dominant, we are enabled to introduce the fundamental 7th and minor 9th.

Let this be particularly remembered, as much depends upon it; for had the fifth of the scale at 19 been accompanied by a *minor* chord, then all the advantages which we have derived from the 7th and 9th would have been lost: we would reiterate, let this be well kept in mind.

The remarkably smooth and flowing progression observable throughout all the parts, is, in a great measure, to be attributed to the introduction of the minor oth.

If the pupil examines and *compares* the harmony of bar 19 with that at 23, he will perhaps better comprehend and more fully appreciate the importance of the rule:—

"THE FIFTH OF THE MINOR SCALE MAY BE ACCOMPANIED BY EITHER A MAJOR OR MINOR CHORD."

And no less important is the fourth rule of harmonizing, viz.:

"THE FIFTH, WHEN REPEATED, MAY BE ACCOMPANIED BY THE DOMINANT."

Again we would reiterate — Compare THE SIMPLE MELODY OF BARS 19 AND 23; then the harmony, and then the rules by which it has been effected.

CHANGING MAJOR MELODIES INTO MINOR.

FOR THE PURPOSE OF HARMONIZING.

The themes which are furnished in the beginning of this work * may be changed into minor in the following manner: first, by merely altering the signature; in this case, the *name* of the key remains unchanged. By way of illustration, let us take a theme written in C major; we will change it into C minor. † How? By placing three flats as a signature, ‡ and then, by raising the 7th of the scale (wherever it may appear) a minor semitone, the theme will be in a minor key. In the key of C minor, the 7th is B flat; we therefore place a natural before it, to raise it a half tone.

Secondly, the major key may be changed into its relative minor by merely transposing it a minor 3rd lower; in that case, the *name* of the key is changed, but the *signature* remains *unaltered*.

- Q. Suppose we were to change theme No. 2, page 14, into minor, according to the first case, what signature would be required?
- A. Two flats; and f, being the 7th of the scale, should be raised a semitone.
- Q. Suppose we change it into minor according to the second case, what signature will it require?
- A. The signature will remain as it now is; but the theme must be transposed a minor third lower, and D be raised a structure, as being the 7th of E minor.

When a theme has thus been changed into minor, the five rules of harmonizing may be employed.

In pianoforte music, especially, the minor scale is frequently employed as a mere passage of effect; in this case, composers have agreed sometimes to raise the 6th of the scale a half tone in ascending (a); but, in descending, to lower the 6th and 7th a half tone (as at b in the following example), some authors write the descending scale as at c, preserving thus the true and genuine character of the minor.

MINOR SCALE. ARISING OUT OF PASSING NOTES.



This apparent anomaly arises from the scale on these occasions being chiefly composed of passing notes,* of which, in the present instance, the common chord of A minor is the foundation.

We shall here *harmonize* the minor scale descending; employ the minor 9th, and add such dissonances as may produce the best effect.



In the above example we have taken advantage of the 5th rule of harmonizing, by accompanying the 6th of the scale with the *dominant*, instead of the *subdominant*; and thus the progression from the *dominant* to the *subdominant*, which would have involved consecutive 5ths and 8ths, is avoided.

The following example, illustrates, in a practical form, and in a regular and uninterrupted progression, all that has been said on the subject of the four inversions of the chord of the minor 9th; to which are added such of the dissonances as are calculated to produce the best effect, interspersed with cadences, so that the whole receives thus a rhythmical form.

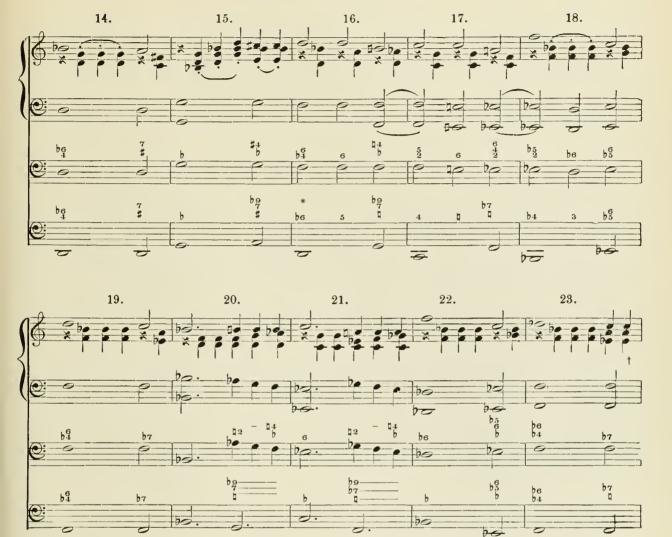
As the fundamental and inverted basses are all figured, † a minute and particular analysis of the exercise is not requisite; but a few observations at the end may assist the pupil.

* To be explained hereafter.

† A separate staff has been added, to prevent the figured bass appearing crowded.



• Produced by the suspension of the 5th by the 6th, prepared by the minor 9th. See fundamental bass, also Ex. 155.



SHORT ANALYSIS.

Bar 2. The 3rd of the chord, C sharp, is selected as the inverted bass, consequently first inversion of the chord of the 9th diminished 7th. See Ex. 158, bar 4, and Ex. 159.

Bar 12. The 5th has been selected — second inversion, ξ_5^6 . See Ex. 158, bar 5, and Ex. 160.

Bar 7. The 7th ______ third inversion, \$\frac{2}{3}\$. See Ex. 158, bar 6, and Ex. 161.

Bar 20. The 9th _____ fourth inversion, \$\frac{1}{2}\$. See Ex. 158, bar 7, and Ex. 163, d.

This will suffice to show how the inversions of the fundamental 9th may be employed most effectively. We shall now point out a few of the dissonances which are introduced in the example. See fundamental bass.

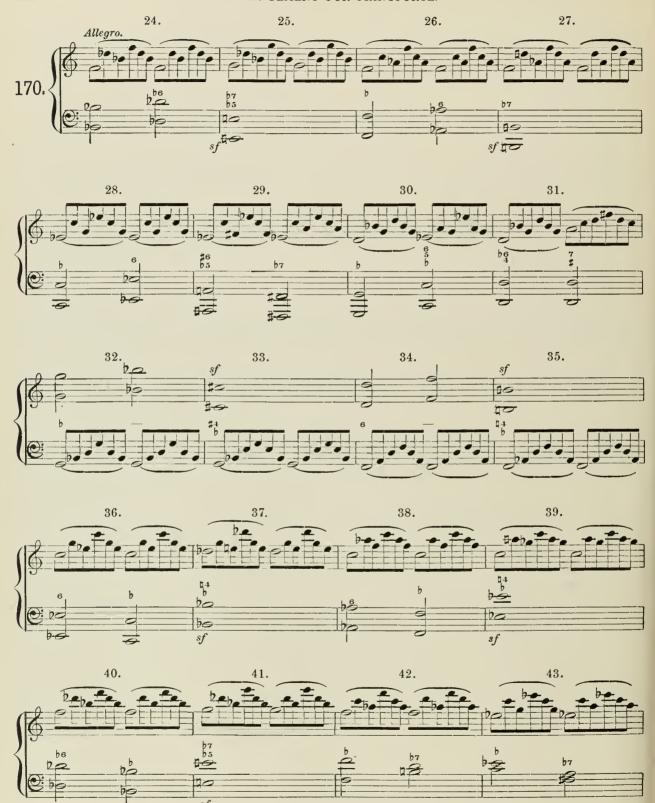
From bar 4 to 5 bass ascends a fourth, dissonance of 4th in soprano, prepared by 7th.

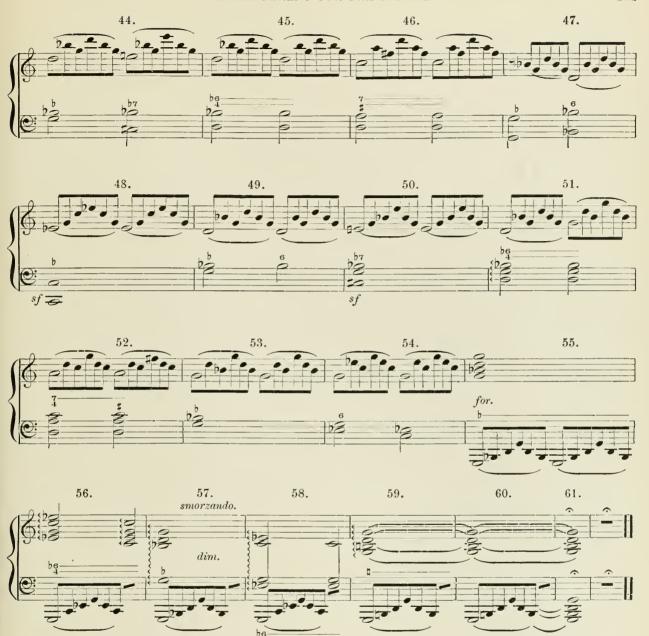
5 to 6 -- 5th. — 4th in bass, — fourth, -- 7th. 10 to 11-— fifth, ————— 4th in alto, - Sth. fourth, 6th in alto, - 9th.

Bars 9, 14, 19, 23, various cadences.

^{*} See note in the preceding page.

[†] In order to produce the proper effect, when playing this and the following exercise, it should be kept in mind that they both form one exercise, and must be performed without interruption.





The above Ex. may be viewed as a continuation of the preceding, written for the pianoforte; the subject in the bass at 23 and 25 is, with an occasional slight change, carried through the whole exercise. From bar 32 to 35 the subject appears for the right hand. From bar 36 to 41 the subject is reversed in the bass.

As this interesting matter will be resumed hereafter, we shall for the present only impress upon the mind of the pupil the necessity of studying what has been already said with care and attention.

MODULATION IN MELODIES BY THE INTRODUCTION OF ACCIDENTALS.

It will be observed that all the *melodies* hitherto *harmonized*, commenced, continued, and ended in the *same* key; and that all diversity of harmony (shown in so great a variety of examples) was produced through the instrumentality of the *three fundamental basses* (tonic, dominant, and subdominant); by the employment of the *four rules* of harmonizing; by inverted basses, etc., etc.

It shall now be shown how a melody, commencing in one key, may, through the means of an accidental,* be made to modulate into another.

This is a subject of considerable importance, and calculated to open a very wide field for our future operations in harmony. In order that the student may be enabled fully to enter into its nature and spirit, and to understand the principles on which it is established, he is strongly recommended carefully to re-read what has been stated respecting the *origin* of *Melody* and *Harmony*,† and scales of *three* sounds.‡ From what has been there said, it is clear that a scale consists in reality of only *three* sounds accompanied by *two* fundamental basses (tonic and dominant).§ The intervals of these two chords, including the fundamental seventh, will be found to comprise in all six sounds, thus:—



Now let it be carefully observed, that, when we employ no other intervals in constructing a melody but such only as are contained in the above example, and use no other fundamental basses but the tonic and dominant; then the melody and harmony will remain in the same key, nor can any departure out of that key take place.

The following melody is constructed on this principle, and continues therefore in the original key.



That no accidental can be introduced in the preceding melody without immediately disturbing the natural order of the progression, is self-evident; therefore, whenever we perceive a sharp or any other accidental placed before an interval in a melody, which does not belong to that melody or scale, we must conclude that a sound has been introduced which is foreign to the original key, and with which, consequently, the two fundamental basses of that key can have no connection. Under these circumstances, it is clear that another bass must be found to accompany that foreign sound.

^{*} Sharps, flats, or naturals. † Page 40 to 45. ‡ Ex. 65, etc.

[§] The subdominant can be considered at present in no other light than as the tonic of another scale of three sounds. (See Ex 67, etc., etc.)

For example, let us suppose that we are required to harmonize the following melody, written in the key of C:—

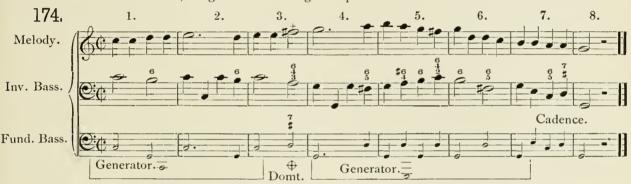


We know that the key of C has neither sharp nor flat; but here we meet with an F #. Now, as this F # forms no part of the key of C, it cannot be accompanied by *either* of the fundamental basses belonging to the key of C; and the question is, how shall we find that *other* bass with which this F # may be accompanied? We reason thus: This F # belongs to the key of G (to the *octave* of which it *ascends* by a half-tone); we conclude, therefore, that a *modulation* to the key of G is contemplated.* Now, as no modulation can be effected but through the *instrumentality* of the *dominant* of the key to which we modulate; † and as D is the dominant to G, it follows, that D is the only proper bass which, on this occasion, can accompany the note F #; and thus a modulation to the key of G is established.

The foreign interval introduced thus, we shall call

"A NOTE (OR THE NOTE) OF MODULATION."

In illustration of the above, we give the following example:



N.B. The notes placed under the fundamental basses point out the generators of the scales of three sounds, or key in which we are for the time being; and the dominant, marked thus \oplus , may be considered as the door which leads to the new key. See Modulation, Ex. 66 and 67.

The preceding melody continues in the original key of C until it arrives at F # (bar 3). Here a modulation takes place to the key of G, by "the note of modulation," F #. This F # is accompanied by D. Why? Because it is the dominant to G.

- N.B. After a modulation has been thus effected, every succeeding interval of the melody must be accompanied by the fundamental basses of the new key (thus—G is now the tonic, and D the dominant), until another "note of modulation" presents itself, by which we are directed to another key.†
 - Q. In what key is the above melody written? A. In the key of C.
 - Q. Does F # belong to that key? A. It does not.
 - Q. How does F# proceed? A. It ascends a half-tone to G.
 - Q. With what bass have you accompanied F \$? A. With D, because D is dominant to G.
- Q. As the note F# has ascended by a half-tone to G, you conclude that a modulation to G has been effected. Now suppose the key to be G, and you should meet with a C#, to what key would you modulate?—A. To the key of D.
 - Q. With what bass would you accompany the note C # A. With A, because A is dominant to D.
 - Q. But suppose G # had been the note of modulation? A. Then I should modulate to A, by the dominant E.
- Q. Why is the note A, bar 4, accompanied by the bass D?—A. Because A is the second of the scale of G, and requires to be accompanied by the dominant.
 - Q. Is F#, bar 5, a note of modulation? A. No; it is the 7th of the scale of G.
 - * The key of G is the first which presents itself in the circle of keys requiring a sharp. (See pages 4, 53.)
 - † See page 44, on Modulation, Ex. 70.

This will suffice to show the *nature* and *property* of a "note of modulation," and how it is to be treated when it ascends a half tone.*

We shall now proceed to point out *another* "note of modulation," the progression of which is diametrically opposite to the former; for it descends a half tone, and modulates to a key, to the tonic of which the note upon which it has thus descended will be a major 3rd.

By this descending "note of modulation" we are enabled to modulate back to the original key.

THE FOLLOWING MELODY MODULATES OUT OF THE ORIGINAL KEY, AND AFTERWARDS RETURNS TO IT.



ANALYSIS.

The first 5 bars of the above example are the same as those in the preceding, except the last note, F\$; and, as that note does nor belong to the key of G, it indicates a modulation out of it. This F\$ becomes now a "note of modulation;" it descends a half-tone, on the major 3rd of the following tonic, C, to the key of which it modulates. As we have now returned to the original key, it follows, as a matter of course, that the remainder of the melody must be harmonized according to that key,—C being now again the tonic, and G the dominant.

There are three things which the pupil ought well to keep in mind: — 1st, that there are two "notes of modulation;" one of which ascends a half tone, and the other descends a half tone; 2nd, that the former modulates to a key which lies a half tone immediately above it, and that the latter modulates to a key to which, when it has thus descended, it will be a major 3rd of the tonic; 3rd, that in the first case, "the note of modulation" is a major third to the dominant; in the second case, "the note of modulation" is the fundamental 7th to the dominant.†

Having fully explained, and illustrated by examples, how modulations in a melody may thus be effected by the introduction of *accidentals*, it shall now be shown how that object may be attained even without the aid of these accidentals. No doubt these agents are in most cases not only the plainest, but also the most certain indications of modulations in melodies; yet it is certain that a simple melody contains within itself not only the GERM of many modulations, to but of melodies also.

The discovery of those intervals in a melody by which we are thus enabled to modulate, and their practical application in harmony, form perhaps the most interesting subjects for intellectual pursuit that can well be imagined. The materials which it supplies for the purposes of harmony are so abundant, so rich, and so extensively applicable, that a melody, the most uninteresting, the most monotonous and unmeaning,

^{*} Let it be kept in mind that the half tones here spoken of (whether ascending or descending) are major half-tones.

[†] It may have been observed that, except at the close of an exercise where the cadence has been introduced, the subdominant has not been noticed. A careful persual, however, of what has been said (page 42, and examples following) will suffice to snow the reason wny that bass, as one of the three fundamentals, must for the present be left out of view.

^{\$} See Modulation, from Ex. 71 to 80.

may be made the means of producing almost endless variety; not only as it may effect the *harmony* as a whole, but also as it respects the *melodious* progression of the inner parts separately.

We shall now turn our attention to the discovery of modulating intervals not indicated by accidentals.

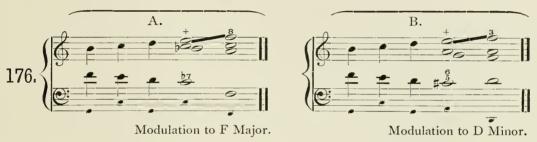
It has already been shown that a note which is raised by an accidental and ascends a half tone modulates to a key which lies a half tone above it; we may therefore conclude that any note which proceeds thus, whether indicated or not by an accidental, will modulate in the same manner. From this consideration arises

THE FIRST RULE

For discovering and employing, for the purpose of *modulation*, those intervals of a melody which have not accidentals.

A. "THE NOTE WHICH ASCENDS A HALF-TONE MODULATES TO A KEY, THE OCTAVE OF WHICH LIES A HALF-TONE IMMEDIATELY ABOVE THAT NOTE."

B. "OR, IT MAY MODULATE TO THE RELATIVE MINOR OF THAT KEY."



In the first case, the "note of modulation" is a major 3rd to the dominant of the new key. A.

In the second case, the note of modulation is a 5th to the dominant of the new key. B.*

It will be observed that, although the "notes of modulation" in both cases ascend by half-tones, yet how very different are the results. In the former case (A), we modulate to a major key; in the latter (B), we modulate to a minor key.

To show the variety which may be produced by the application of the *first* rule only, we here present the student with a melody which, for *monotony*, can scarcely be equalled; written thus *designedly*, to show the efficacy of the rule.

A MELODY HARMONIZED ACCORDING TO THE FIRST RULE OF "MODULATING BY THE INTERVALS OF MELODY" WHICH HAVE NOT ACCIDENTALS.



* As the rule naturally divides itself into two parts, — to prevent confusion in the practical application of it, w: have distinguished the one from the other by the letters A and B. Let this arrangement be kept in mind.

ANALYSIS.

This exercise commences in the key of C, in which it continues until the 2nd bar, where the "note of modulation," E, (marked thus +) ascends a half-tone, and modulates to F major*.

Bar 3. E, the same "note of modulation," ascends a half tone; but, instead of modulating to F major, it modulates to the relative minor † of that key— D minor.

Bar 8. Ditto — A minor.‡
Bar 9. Ditto — C major.*

- Q. At bar 2, you have modulated to the key of F, could you have modulated to any other?
- A. I could have modulated to D minor.
- Q. Suppose that you had modulated so in bar 3; how ought you to have treated the note of modulation in bar 4?
- A. I would have modulated to F major, and then, in bar 5, to D minor.
- Q. At bar 5, you have modulated to the key of C, by the note of modulation, B\$; could you have modulated to any other key?
- A. Yes; to the relative minor.
- Q. Suppose that you had modulated, at bar 6, to A minor, instead of C major; how would you have proceeded afterwards?
- A. I would have continued in A *minor* until I had arrived at the note of modulation, B 5, in bar 7, and there I would have modulated to C major.

The following example exhibits the same melody reharmonized, showing how this rule may be differently employed. Let the student carefully examine and then compare the effects of both, bar by bar; not only as regards the modulations, but also as regards the inverted basses and inner parts; and let it be remembered, that as a change in the inverted bass necessarily brings about a corresponding change in the other parts likewise, so new melodies will naturally arise, which (as shall be explained hereafter) may be themselves converted into principal melodies, and harmonized as such.



Let it be borne in mind that the foundation upon which all this variety rests is modulation as produced by the intervals of a melody.

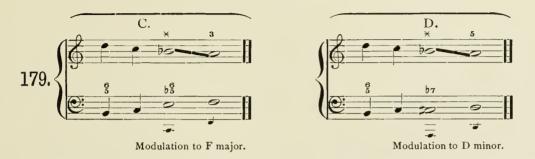
The student may put this rule into practice more extensively, if required: for example—let him select one of the *themes* given in the early part of this work, || and harmonize it simply according to the four rules of harmonizing, || with inverted basses.** Then let him search out all those intervals which ascend by halftones: these he may employ (if he chooses) as notes of modulation; but (let it be remembered) he is not obliged to do so; that is, he is not obliged to modulate. This must be left entirely to his own judgment and taste.

- * First rule, A.
- † See chord of the minor 9th, Ex. 158, on which this rule is founded.
- † First rule, B.
- § Let the pupil carefully examine and compare the progression of the alto, tenor, and bass of the present example with the one immediately preceding, and mark well the difference.
 - || See pages 25 to 32.
- ¶ Themes, pages 27, 30, 32.

** See inverted basses.

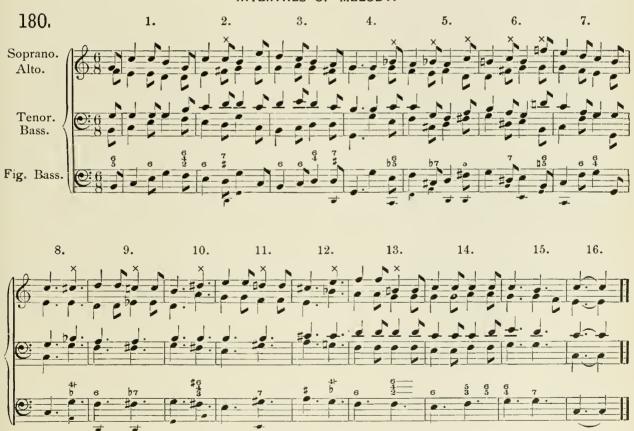
SECOND RULE.

C. "THE NOTE WHICH DESCENDS A HALF-TONE MODULATES TO THE MAJOR OF THE TONIC." D. "OR, TO THE RELATIVE MINOR OF THAT KEY."



In the first case, the "note of modulation" will be the fundamental 7th of the dominant of the new key. In the latter case, the note of modulation will be the minor 9th * of the dominant of the new key.

A MELODY HARMONIZED ACCORDING TO THE SECOND RULE OF MODULATING BY THE INTERVALS OF MELODY.



^{*} This rule is also founded upon the chord of the minor 9th. (See page 109.) See also the fifth rule of harmonizing by fundamental basses, page 131.

ANALYSIS.

The key is C to bar 2, where the "note of modulation," C, descends a half-tone to B, and thus modulates to a key, to the tonic of which that B is a major 3rd.

Q. What key is that?

A. G major?

Bar 4. The "note of modulation," Bb, descends a half-tone, and modulates to the key of F major. †

Bar 5. Here the "note of modulation," Bb, occurs again, and descends a half-tone; but instead of modulating to F major, we modulate to the relative minor (D minor).

Bar 5. The last note C (note of modulation), descends a half-tone, and modulates to G major. Second rule.

Bar 6. The same note, C, -—E minor, Ditto.

Bar 6. Note F, - C major. Ditto.

- ascends -____ D minor. First rule. Bar 8. —— C #.-

Bar 9. -- C#.-- descends -

G major. Second rule.
E minor. First rule.
A major. Second rule. --- ascends -Bar 10. — D#.-

descends -Bar 11. - D#,-

After proceeding thus through several other modulations, this exercise concludes with a cadence in the original key. The student, by way of exercise on this rule, may here again follow the directions given immediately after Ex. 178, page 126.

Q. Suppose that you were in the key of Eb, and that the note Eb DESCENDED a half-tone; to what keys are you enabled to modulate?

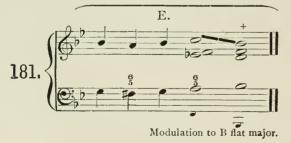
- A. To Bb major, or its relative minor, G minor.
- Q. By what rule?
- A. By the second rule. (See page 127.)
- Q. But suppose that the D occurs, and ASCENDS a half-tone; to what keys can you modulate?
- A. To Et, or its relative minor, C.
- O. By what rule?
- A. By the first rule. (See page 125.)
- O. Suppose you had met with B#, and that it had ascended a half-tone; to where could you have modulated?
- A. To C# major, or A# minor.
- O. By what rule?
- A. By the first rule.
- Q. Suppose that you modulate by the second rule; what interval will the "note of modulation" be to the dominant?
- A. In the first case, it will be a fundamental 7th; in the latter case, it will be a minor 9th.*
- Q. Suppose that you modulate by the first rule; what interval will the "note of modulation" be to the dominant?
- A. In the first case it will be a major 3rd; in the latter, a fifth. †

Heretofore our attention has been directed solely to those intervals which proceeded by half-tones only (ascending or descending); and upon those progressions were established our first and second rules. Now, however, the attention of the student shall be directed to those intervals which descend by WHOLE tones: this naturally leads us to the third rule.

THIRD RULE.

E. "THE 'NOTE OF MODULATION' WHICH DESCENDS A WHOLE TONE, MODULATES TO A KEY WHICH LIES A WHOLE TONE BELOW THE 'NOTE OF MODULATION.'"

F. "OR, TO THE RELATIVE MINOR OF THAT KEY."





Modulation to G minor.

* Ex. 179.

† Ex. 176.

At E, the "note of modulation," C, descends a whole tone and modulates from G minor to Bb major.

At F the same "note of modulation," C, descends also a whole tone, but modulates from B & major to G minor.

In the first case, the "note of modulation" is 5th to the dominant of the new key.

In the latter, the "note of modulation" is a fundamental 7th to the dominant of the new key.

A MELODY HARMONIZED ACCORDING TO THE THIRD RULE.



ANALYSIS.

The exercise in G minor continues in that key until the commencement of bar 3; here the "note of modulation," C, descenas a whole tone to B 0, and modulates to that key.

The second part continues in the same key to the end of the 6th bar, where the "note of modulation" again descends a whole tone, and modulates to the original key, in which it concludes.

The following example exhibits a still *more* extended application of this rule. It will be observed that, in the *preceding* example, we modulated simply from a *minor* key to its *relative* major, and vice versa. *Here*, however, we have enlarged our operations, and, by the same rule, have modulated to others which are more distantly *related* to the original key.

A MELODY HARMONIZED BY THE SAME RULE.



ANALYSIS.

Bar 2. The "note of modulation," D, ascends a half tone, and modulates to C minor † (relative minor to the subdominant of the original key).

Bar 3. The "note of modulation," A, descends a whole tone, and modulates back to the original key, G minor.

- * See inversion of dissonances, page 97, Ex. 140, 2.
- † Let the student figure the inverted bass himself.

The second part, at bar 5, commences with the relative major, without modulation (that 1s, by progression*); a modulation, nowever, to that key takes place on the second part of bar 5.

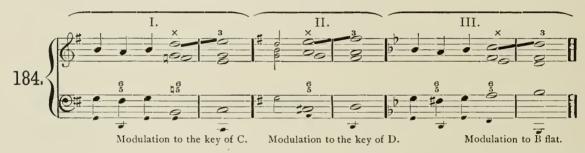
N.B. The consecutive 5ths between bars 4 and 5 are admissible, as a new strain commences at bar 5.

Bar 7. G, the "note of modulation," descends a whole tone to F, and modulates to D minor (relative minor to the dominant of the original key), to the tonic of which this F will be the minor 3rd. †

This may suffice to show, in a slight degree, what *may* be the *third* rule. It is, however, only by practice, and a careful study of effects, that a thorough knowledge can be acquired of the variety which these rules afford in harmonizing.

FOURTH RULE.

"THE 'NOTE OF MODULATION' WHICH ASCENDS A WHOLE TONE MODULATES TO THE MAJOR THIRD OF THE TONIC."



At I., the key is G major. The "note of modulation," D, ascends a whole tone to E, and modulates to the key of C major, to the tonic of which E is 3rd. ‡

At II., the "note of modulation," E, ascends a whole tone to F#, and modulates to the key of D major. §

At III., the key is G minor. The "note of modulation," C, ascends a whole tone to D, and modulates to B b. ||

N.B. There are other keys to which this rule would *enable* us to modulate; but, as they are rather too far removed from the original ¶ key, they should be avoided.

The above *three* modulations, therefore, are not only the most effective in general practice, but contain sufficient *variety* for all our purposes.

N.B. The fourth rule admits of only one modulation, in which the note of modulation is 5th to the dominant.

A MELODY HARMONIZED ACCORDING TO THE FOURTH RULE OF MODULATING BY THE INTERVALS OF A MELODY.



^{*} See page 42. † See page 128, Ex. 181.

|| The relative major of G minor. || Extraneous keys

[§] A modulation to the dominant of the original key.

t This is a modulation to the subdominant of the original key.



ANALYSIS.

- Bar 2. The "note of modulation." D, ascends a whole tone to E, and modulates to the key of C major.*
- Bar 3. The "note of modulation," F#, ascends a half tone to G, and modulates (by the first rule) to the original key.
- Bar 6. The "note of modulation," E, ascends a whole tone to F #, and modulates to the key of D major.
- Bar 9. The "note of modulation," A, ascends a whole tone to B, and modulates to the original key.
- Bar 13. The "note of modulation," D#, ascends a half tone to E, and modulates to E minor (by the first rule).
- Bar 23. The "note of modulation," A, ascends a whole tone, and modulates to the original key.†

Having disposed of those notes which ascend and descend by half tones and whole tones, the student shall now be introduced to the fifth rule.

FIFTH RULE.

"WHEN ANY INTERVAL IS REPEATED IN IMMEDIATE SUCCESSION, THE INTERVAL THUS
REPEATED MODULATES TO THE FIFTH OF THE TONIC.." †



At I, the example is in G major. At bar 2, the note G is repeated, and we modulate to C major, to which that G is a 5th. N.B Had the key been minor (for example, G minor), we should have modulated to a minor key (C minor).

At II, bar 4, the note E is repeated, and as the key is minor, we modulate to A minor.

It is necessary to notice, that the above remarks refer only to such "notes of modulation" as are derived from, or originate in, the octave of the preceding chord.

At III, as the "note of modulation," G, bar 6, is derived from the minor 3rd of the preceding chord, we modulate to a major key.§

- * This is a modulation to the subdominant of the original key.
- † When the fourth rule is employed, a licensed 7th becomes indispensable. (See licensed 7th, page 24.)
- † Observe the analogy between this rule and the third rule of harmonizing by fundamental basses, Ex. 53.
- § See Ex. 72, page 46, m, n.

Here, however, at IV, bar 8, the "note of modulation," B, is derived from a major 3rd in the preceding chord; we therefore modulate to a minor key. Let this distinction be well kept in mind.

N.B. The "note of modulation" will be an octave to the dominant of the new key.

It may be observed, that the harmony, as we proceed with these rules, increases in richness, and becomes more and more interesting. The fifth rule, especially when combined with some of the others, will be found a most powerful auxiliary in this respect.

A MELODY HARMONIZED ACCORDING TO THE FIFTH RULE OF MODULATING BY THE INTERVALS OF A MELODY.



THE SAME MELODY IN EXTENDED HARMONY.



ANALYSIS.

Bar 1. The last note, B ("note of modulation"), is repeated. As this "note of modulation" is, in the preceding bar, derived from a major 3rd, we modulate to a minor key — E minor. See Ex. 186, IV.

Bar 2. B, the "note of modulation," ascends a half tone, and modulates to C major.*

Bar 3. C, the "note of modulation," descends a half tone † to B, and modulates to G major.

Bar 4. A, the "note of modulation," descends a whole tone t, and modulates to E minor.

Bar 5. G, the "note of modulation," descends a half tone †, and modulates to D major.

Bar 6. F#, the "note of modulation," repeated, derived from a major 3rd, modulates to B minor. See IV.

From bar 9 to 16 is in extended harmony, by means of which a new effect is produced, not only with reference to the harmony collectively, but also in the melodious progression of the alto and tenor; and, as these inner parts may hereafter be converted into principal melodies and then harmonized, it is a matter of some importance that the pupil pay particular attention to what has here been said upon this interesting subject, and reflect upon it.

Besides this, there will also be perceived a difference in the application of some of the rules; for instance, at bar 10, B, the "note of modulation," ascends a half tone; but, instead of modulating to C major, as at bar 2, we have modulated to the relative minor (A minor); in which key the harmony remains until it arrives at the "note of modulation," A, bar 12. These alterations and changes in the modulation should be very carefully attended to; they produce new melodies.

Bar 17 commences in D minor.

Bar 18. D, the "note of modulation," descends a whole tone, and modulates to A minor.‡

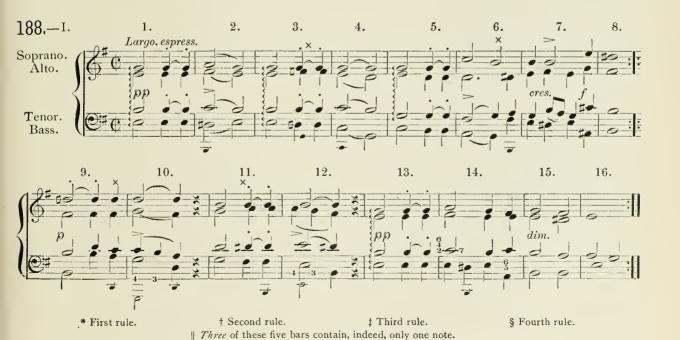
Bar 19. The last note, A, is repeated, and modulates to D minor.

Bar 20. The last note, A \$\mathbf{x}\$, ascends a half tone, and modulates to B minor.

Bar 21. B, the last note, is repeated, and modulates to E minor. See Ex. 186, II, and obs.

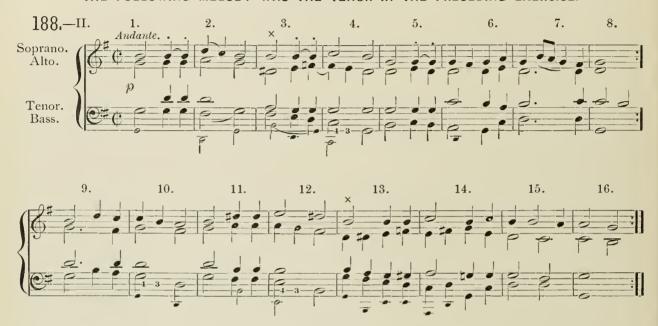
Bar 23. D, the second note, ascends a whole tone, and modulates to C major. §

The following example in E minor will be found a most interesting and useful study. Let it be observed, that, in harmonizing this melody, we have employed principally the fifth rule. For the first five bars, the melody is exceedingly monotonous (being designedly confined nearly within the compass of two intervals ||), and consequently affords a fair opportunity of testing the efficacy of that rule. By employing it on the present occasion, all the monotonous effect of the melody is not only removed, but such a melodious progression is imparted to the inner parts (especially to the tenor), that we have been enabled to convert that part into a principal melody, as exhibited in Ex. 188, II.



If the above and the *following* exercise be carefully examined, the difference between them will be found to be *very great indeed*; for the former is in a *minor*, from which the *present* one, which is in a *major* key, has been extracted or derived.

THE FOLLOWING MELODY WAS THE TENOR IN THE PRECEDING EXERCISE.



Above all things, let it be *kept in mind* that the *above* melody *originated* in the *preceding* exercise, in which it was the *tenor*; that exercise was in the key of E minor, and that the *present* one is in the key of G major. Between them, there is little or no resemblance. The rhythm alone, being the same in both, may perhaps be said to produce some resemblance; but that is all.

The following example exhibits a portion of the foregoing melody, with the *rhythm* changed from common time to $\frac{3}{4}$. This rhythm also is an important study, which shall appear in a subsequent part of this work.

PART OF THE PRECEDING MELODY, THE RHYTHM BEING CHANGED.



The following example, which is written for the *pianoforte*, exhibits the *fifth* rule in quite a *different* character. The effect produced by that rule in the *preceding* examples was *soft*, and, as it were, conciliating. Here, however, the effect is quite contrary.

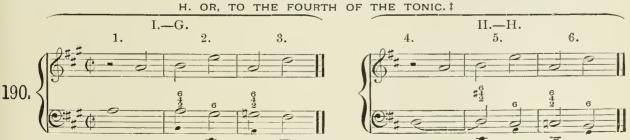
^{*} See Rhythm, Periods, etc., pages , to old edit.



After the minute analyses of preceding examples, it may suffice to say that the observations made already may be applied here with equal force.

SIXTH AND LAST RULE.

G. "WHEN THE 'NOTE OF MODULATION' ASCENDS A PERFECT FOURTH, OR (WHICH IS THE SAME THING) DESCENDS A PERFECT FIFTH, WE MAY MODULATE TO THE OCTAVE OF THE TONIC."



- * The figures between parentheses show what rule has been employed.
- † These keys may be either major or minor.

At I, G, the "note of modulation," B, bar 2, ascends a fourth, and modulates to the key of E; to the tonic of which, that E is the octave. (See fundamental bass.)

The "note of modulation," A, bar 3, ascends a fourth to D, to the key of which it modulates. *

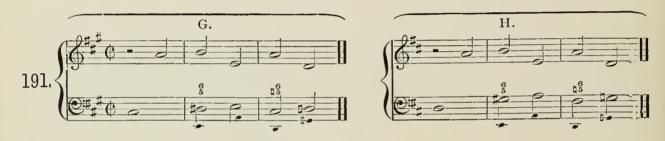
At II, H, the "note of modulation," B, bar 5, ascends a fourth to E, as at bar 2; but how VERY different is the modulation! For example:—

At I, G, bar 2, we modulated to the key of E.

At II, H, bar 5, by the same "note of modulation" we modulate to the key of A.

The great importance of this rule of harmonizing, and the vast influence which it exercises in modulation, will be better understood when practically illustrated.

N.B. When this rule is employed, it is good to let the inverted basses and melody proceed by contrary motion; as the "note of modulation," therefore, ascends in example 190, G, we prefer the third inversion; and, for the same reason, when the "note of modulation" descends, we prefer the first inversion, as in the following example:—



The employment of the other inversion (the second) is not, however, to be rejected; nor should we confine ourselves to *contrary motion* only, as that would produce a monotonous effect which should be carefully avoided.

As the *harmony* of the following melody will hereafter become the root or *parent* of many othes melodies, the pupil is strongly recommended to examine it most carefully — most minutely; especially when the difference of effect produced by the employment of the rule with reference to G or H, is introduced.

A MELODY HARMONIZED ACCORDING TO THE SIXTH RULE OF MODULATING BY THE INTERVALS OF A MELODY.



* As this rule is also divided into two parts, we have, in order to distinguish them, employed the letters G and H for this purpose.

† Notes of modulation, according to G.

‡ Here, in order to obtain a flowing melody for the tenor, we have permitted the fundamental 7th to descend to the 5th, prior to its resolution.



ANALYSIS.

As the "note of modulation," B, par 2, ascends a 4th, we might have modulated to the key of E; instead of which, we have continued in the original key. Why? It is not good to modulate so soon out of the original key. Compare this bar with bar 6, where we have modulated to the key of E.

- Bar 3. The "note of modulation," A, ascends a 4th, and modulates to the key of D, * by the first part of that rule (G).
- Bar 4. We have modulated back to the original key, by the second rule. (Page 127.)
- Bar 5. Compare this bar with bars 2 and 6.

^{*} Subdominant. — Let it be remembered that we are not obliged to modulate.

N.B. There, in order to procure a flowing melody in the bass, we have employed the first inversion, although it does produce similar motion.

Bar 6. We have, for the same reason, employed the second inversion.

This will suffice to show the most efficacious manner of choosing inverted basses on those occasions.

Bar 6. The "note of modulation," B, ascends a 4th, and modulates to the key of E, in which key the first part closes.

Bar 9. The "note of modulation," B, ascends a 4th to E, and modulates to the key of A (the original key).* Here the second part of the sixth rule (H) is employed. (See Ex. 190, II.)

Bar 13. C #, the "note of modulation," modulates to F # minor, † by the fifth rule. (Page 131.)

Bar 17. F # descends a fifth to B, and modulates to B major. 1

Bar 18. Modulation to the key of A.

Bar 21. Modulation to E major.

Bar 22. Modulation to D major.

Compare these two modulations with those at 17 and 18, and observe that, although the "notes of modulation" and the progression of them are the same in both cases, yet how very different is the result! There we modulated to B major and then to A major. Here, we modulate to E major and then to D major. Observe also the difference of the progression of the inner parts with close attention, as well as that produced by the same "notes of modulation," bars 25, 26, 29, and 30.

N.B. From bar 25 to 32 the rule is exhibited in a minor key. §

It is unnecessary here to enter more fully into the analysis of the present exercise, as the subject wnich we are now going to present to the intelligent pupil will afford ample matter for this purpose—a subject one of the most interesting and intellectual, and at the same time, to the practical harmonist, one of the most important that can well be conceived; viz., extracting or selecting from a harmonized melody one or other of its inner parts, or inverted basses converting it into a principal melody, and, having harmonized it, extracting again out of that harmony one of the inner parts, and converting it also into a principal melody. During this process, we shall not always select the entire of an inner part, but extract such portions of each as shall, when formed into a principal melody, produce a pleasing and melodious progression. We have already exhibited a specimen of this sort; ¶ but we shall now enter more fully upon the subject.

Our first care should be to examine the progression of the alto, tenor, and bass of those examples out of which we intend to make our extracts.

The following exercise contains a melody which has been extracted from different parts of example 192. To discover from which of the parts the present new melody has been constructed, let the student compare bar with bar as they are numbered; for the numbers of both examples correspond.

A MELODY EXTRACTED FROM THE HARMONY OF EX. 192, AND HARMONIZED HERE IN A VARIETY OF WAYS.



* The note D, in the inverted bass, is the dissonance of the 4th. (See dissonance, Ex. 140, bar 3.)

† Relative minor to the original key. ‡ Relative minor

‡ Relative minor to the subdominant of the original key.

§ Irrelative minor to the original key.

| Hinted at in pages 124, 126.

¶ Ex. 188, II.

** The notes of *embellishment* which appear in this example, called "passing notes," shall be explained in the next number.

They do not form an essential part of the harmony



Let the student attend to the following directions:—

- I. To examine and compare the harmony of both examples, bar by bar; not superficially, but very carefully.
- 2. To note particularly the progression of each of the three parts, with a view to their being hereafter converted into principal melodies.
- 3. Occasionally to change *close* harmony into *extended*, and vice versa, because by this process a NEW *progression* of the inner parts will naturally follow. This is a matter of great consequence, the value of which may perhaps be properly estimated by and by.
- 4. To alter, sometimes, the *inverted* basses; for, by that means also, a new progression is introduced into the inner parts.

As the several parts of Ex. 192, from which the *new* melody of Ex. 193 has been extracted, are sufficiently marked, we shall only refer to such matters as may assist the student in his reflection, while engaged in this pursuit.

^{*} The 3rd, in the alto, descends to make room for the dissonance of the 9th in the soprano. (See Ex. 120, pages 86 and 87, and explanation.)

[†] The 3rd of the dominant, in the soprano, afterwards in the alto, descends here by license; the tenor, however, in the first instance, where that 3rd is doubled, makes amends for this seeming impropriety by ascending.

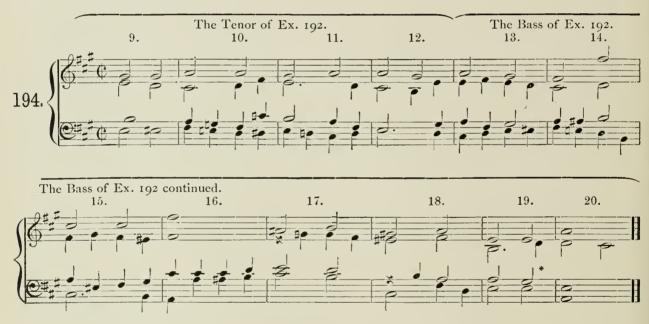
When we examine Ex. 193, the new melody, the first object that arrests our attention is the new combination of harmony and modulation which presents itself at every step; for instance, the note of modulation, D, in the soprano, bar 5 (original tenor), enables us to modulate to F# minor. Now, let it be observed that this is a modulation which the original harmony did not admit. Thus not only is a new effect produced in the harmony generally but also a new progression occurs in the inner parts, which, by a little management, may be turned to good account. In bar 6, by selecting the alto, we are enabled to introduce C#, the minor ninth; thus producing the chord of the diminished 7th (a most effective chord), from which we were excluded in the original.

In bar 11, the note B, in the soprano (bass in the original), enables us to modulate to F# minor.

From bar 12 to 16, we have selected the *tenor*, and modulated to the key of A, bar 14; while, in the original, we modulate to F# minor.

To enter into a particular analysis of each bar of these two examples would be endless, and calculated rather to retard than advance the pupil in his studies. Examples are before him, the corresponding bars of which are all numbered, and to them a constant and careful reference is recommended. It will amply repay him.

The following is a melody extracted from the *tenor* and *bass* of Ex. 192, commencing at the 9th bar. Compare this harmony with the original.



The following melody is extracted from the alto of Ex. 192, commencing at bar 9.



^{*} Here again the 3rd of the dominant chord descends on the 5th of the tonic, in order to enrich the harmony. These, however, are licenses, which must be used very sparingly.



Compare the progression of the inner parts of the harmony from 13 to 16 with 17 to 20.

Heretofore we have selected our *new* melodies from Ex. 192. That example we will call "the Original," and Ex. 193 "the Branch." We shall now make our selections from "the Branch," and construct from it *new* melodies for harmonizing.

The following melody (ending in C# minor) exhibits the tenor of Ex. 193 (which ended in E major).

A few passing notes are introduced to render the progression more smooth and melodious.



Here we have the bass and alto of "the Branch" as a new melody, from bar 1 to 8.



Although far from being exhausted, this portion of the subject must be concluded with the next example. The pupil is advised to stamp these rules indelibly upon his memory by patient practice and careful study. The thinking faculties should be brought into active operation; the variety of effects should be heard, examined, and accurately compared: thus will the judgment become gradually matured, and produce the accomplished harmonist.

Be not too anxious to proceed; reperuse and reflect; follow the advice of the sage Lord Bacon; "Make haste slowly."

N.B. This present subject is eminently worthy of peculiar attention; it brings to light a vast mine of musical wealth, opening up inexhaustible stores of melody and harmony, otherwise perhaps forever lost; and

^{*} The fundamental 7th in the tenor is omitted, in order to enrich the succeeding tonic chord with the 5th.

it may be pardoned were we to go so far as to say that it is sufficient of itself to furnish a fund of elegant ideas, even to the student who has none.

A part of Ex 192, harmonized in the relative minor. (See page 136.)



NOTES OF EMBELLISHMENT,

PASSING AND AUXILIARY NOTES.

PREPARATORY to entering upon this important branch of harmony, it is necessary to explain what is understood by the

THREE MOTIONS IN HARMONY.

- I. When two or more parts proceed together, ascending or descending, they are said to proceed by similar motion, as at (a) in the following example.
- 2. When one part ascends or descends while another remains in its place, an oblique motion is produced, as at (b).
 - 3. When one part ascends while another descends, they proceed by contrary motion, as at (c).



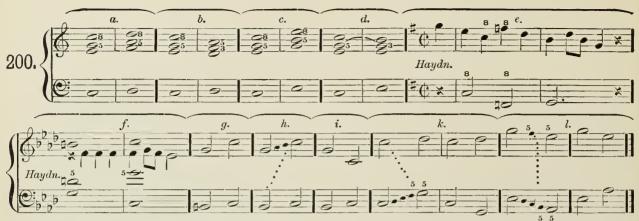
These different motions or progressions may be more or less combined. Two parts may proceed by similar or contrary motion, and a third part remain in its place, as at (d), producing collectively the similar and oblique; at (e), contrary and oblique; at (f), similar and contrary; at (g), similar, oblique, and contrary; at (h), all are combined in the resolution of the chord of the fundamental 7th.

N.B. Similar motion is permitted only when the parts proceed by thirds or sixths; with the latter, the fourth may be combined, as at (a).

CONSECUTIVE FIFTHS AND EIGHTHS.

It has already been shown elsewhere* how these forbidden progressions may in some measure be avoided. Now, however, it becomes necessary to dilate somewhat more on this subject, as frequent references will be made to it hereafter.

One general rule will suffice to show how these disallowed progressions may be avoided; viz., by the employment of contrary or oblique motion.



At (a), consecutive 5ths and 8ths; at (b), prevented by contrary motion; at (c), consecutive 5ths and 8ths; at (d), the 8th prevented by contrary, and the 5th by oblique motion.

Consecutive 5ths and 8ths are permitted when the parts proceed by contrary motion.

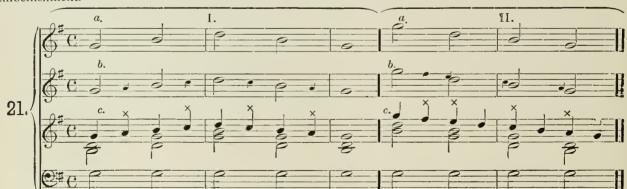
At (e), 8th between treble and bass. At (f), 5th between tenor and bass. Extracted from Haydn's Quartets.

HIDDEN FIFTHS AND EIGHTHS.

Although these progressions are very little regarded by modern composers, yet it may be necessary to mention that when two parts proceed together by similar motion, and terminate their progression by 8ths, they are said to produce HIDDEN consecutive 8ths, as at (g); for if the space between these two intervals were filled up, as at (h), consecutive 8ths would be the consequence; but where these notes are not introduced, such consecutives are purely imaginary. However, they may be prevented by contrary motion, as at (i). The same observations apply to hidden 5ths (see k, l). Hidden 5ths and 8ths are generally allowable; and it will be found that the works of the most classical authors abound with them.

NOTES OF EMBELLISHMENT.*

It will be observed that the harmony which has hitherto engaged our attention consists solely of concords, chords of the fundamental 7th, minor 9th, and their different inversions,† founded on a progression of fundamental basses. To this fact we would now most particularly direct the attention of the pupil, because we are about to introduce notes or sounds into that harmony which do not form an essential part of it. These notes of embellishment are employed for various purposes; one of which is, that we may obtain a more flowing and melodious progression than that which is produced by the more simple intervals of a melody or harmony, which we call essential notes, in contradistinction to those called notes of embellishment.



At I (a), the intervals of the melody (the essential notes) proceed by thirds. The space between these thirds we may fill up as represented by dots (at b), and as they are usually written (at c). Similarly at II the spaces between the essential notes may be filled.

^{*} These notes have been slightly noticed before. See p. 57. † Dissonances must for the present be kept out of view.

When notes are thus introduced between essentials, they are called

SIMPLE PASSING NOTES.

pecause they pass directly between one essential note of the harmony and another.*

These passing notes may be written either before or after the essential notes.

WHEN THEY ARE INTRODUCED IMMEDIATELY AFTER THE ESSENTIAL NOTES (AS AT C), THEY ARE CALLED "UNACCENTED."

When they are introduced BEFORE the essential notes they are called "ACCENTED passing notes."

In the preceding example, 201, II, c, all the passing notes (except the F) are accented.

The accented passing note occupies the first portion of the time belonging to the essential note.

The unaccented occupies the second portion (as marked \times at f).

The following example exhibits a practical illustration of this subject:



At I, is a *simple* melody, the intervals of which proceed chiefly by *thirds*;† at II, this melody is embellished with *unaccented* passing notes; and at III, they are introduced in the *bass*; by which a sort of *conversation* is carried on between the bass and soprano, called "*Imitation*."‡ At IV, appears the simple bass (that is, without any embellishment). This bass is *figured*, showing that the essential notes *only* should be figured, and *no other*.§

It is evident that, through the agency of these passing notes, the melodious progression of the soprano and bass is much improved. Let us now try whether we cannot introduce them also into the other parts. We will take, for instance, the melody at I, in the preceding example, and harmonize it in four parts.



Here we find that the *peculiar* character of the passage || in the *soprano*, at bar 1, is imitated by the *alto* at bar 2, and by the *tenor* at bar 3, proceeding, in the latter case, by 3rds. (This is a progression of *compound passing notes* in *similar* motion.**) At bar 4, the bass commences a *new* passage, in conjunction with the *tenor*, ascending by 3rds in similar motion, which, at bar 5, is imitated by the *soprano* in *contrary* motion.††

Supposing the alto, bar 4, to originate the passage of imitation, in that case, the soprano imitates it at bar 5.

At bar 4, it will be observed that, while the bass and tenor ascend together by 3rds, in similar motion, the soprano and alto descend together by sixths. Thus we see that, while two of the four parts proceed together by similar motion, they collectively proceed by contrary motion. †† Compound progressions like this should be carefully noticed; they abound in the compositions of good masters — N.B Bars 3 and 4, consecutive 5ths between alto and bass, in contrary motion.

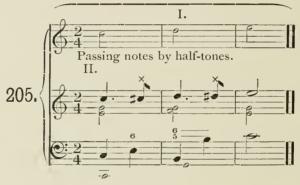
- * These (and none else) are the real, the legitimate passing notes. The reason for this observation will be seen presently.
- † A progression peculiarly suited to the introduction of simple passing notes. ‡ Of this, more hereafter.
- § Many errors are committed in figuring the inverted bass, by not attending carefully to this point.
- ¶ Sometimes called "subject." ¶ They are tenths; but in simple counterpoint they are considered as 3rds only.
 - ** See Ex. 199, a. | †† See Ex. 199, c. | ‡† See Ex. 199, f. | | | | | See Ex. 200, f.

As passing notes do not form any part of the *essential* harmony, they must be considered more or less as dissonances. *Unaccented* passing notes, being *less dissonant* than the *accented*, may be considered as nearer allied to *consonances*; while the *accented*, being struck with the chord, and consequently more discordant in their effect, may be considered as nearer allied to the *real* dissonances*; as the following example will illustrate:—



At I, is a *simple* melody with its bass, both proceeding by thirds in contrary motion. At II, are exhibited *unaccented* passing notes. At III, *accented* passing notes. Here we perceive that the note D, being struck with the inverted bass, E, produces an effect similar to the dissonance of the 9th when it resolves into the 8th; and the note E, when struck with the inverted bass, F, produces that of the dissonance of the 6th resolving into the 5th.† They might, therefore, be easily mistaken for *un*prepared dissonances, unless the principle on which these passing notes are established be well understood.

When the *essential* notes of a melody proceed by *seconds*, and these seconds are *whole* tones, then the *passing* note will be a *minor* semitone.



At I, the melody (a portion of the diatonic scale) proceeds by whole tones.

At II, C # and D # form the passing notes.

Passing notes of this description (which should be of short duration) may be very effectively employed as notes of modulation.

PASSING NOTES BY HALF-TONES CONVERTED INTO NOTES OF MODULATION.



That converting passing notes thus into notes of modulation is a subject of great importance will be evident if we compare the harmony of the above example with the one immediately preceding. Let the pupil give this matter his serious consideration.

- * See chord of the fundamental 7th compared with dissonances, page 87.
- † See dissonances, Ex. 113, II.
- ‡ See modulations by intervals of a melody, page 125, Ex. 176.

The following example affords instances of the effective introduction of all these passing notes.



At II, unaccented passing notes.

At IV, they are treated as notes of modulation.

We shall here give a specimen of a harmonized melody embellished with passing notes, and let the pupil particularly notice the effect produced by the passing note, B \$\mathbb{z}\$, combined with the fundamental 7th, at bars 1 and 2, as also bars 5 and 6.



Bar 5. Observe the imitation between the soprano and alto, produced by passing notes of half a tone.

It is presumed that sufficient has been said to show the nature, cnaracter, and mode of treatment of simple passing notes. But should the pupil repeat the question, "What are passing notes?" They are notes which pass immediately and directly between the intervals of a melody. This must be kept in mind, at the present moment, most carefully, because we shall now introduce notes of embellishment which po

Bar 9. See also these passing notes converted into notes of modulation.

^{*} This passing note will be more fully explained when we treat of Ascending Dissonances.

NOT pass between the intervals of a melody, and which, consequently, are NOT PASSING notes, though bearing a strong resemblance to them; they are employed as substitutes, when passing notes cannot be introduced. For this reason, we shall call them

AUXILIARY NOTES.

When these auxiliary notes are skilfully and judiciously interwoven with passing notes, they form the groups of notes usually called "passages" which, from their peculiar form and character, become so impressed upon the mind, that, when they reappear in some other parts of the harmony, they are immediately recognized. When a passage, thus remarkable, is heard in one part of the harmony, and repeated in another, it is called imitation.*

It will be observed, although *simple passing* notes thus give to the melody a more *graceful* and *flowing* progression, and a decided and marked character, that, nevertheless, without the aid of auxiliary notes, we should still fall very short of effecting our purpose; namely, of constructing the best passages for imitation. In order, therefore, that we may form a correct idea of the nature and usefulness of *these* notes of embellishment, let us suppose a note repeated, as at I.. in the following example:—



In this repetition of the same sound there is nothing to excite attention or interest; all is monotony; but let them be written as at II., and immediately a degree of animation is imparted to them. A passage appears exceedingly simple, it is true; but as the *peculiar* form of it may easily be recognized, it is fit for *imitation*. This has been effected by the *auxiliary* note, F#; and as this note is written BELOW the essential note, we shall call it an

AUXILIARY NOTE FROM BELOW

When written above the essential note (as at 2), it will then be an

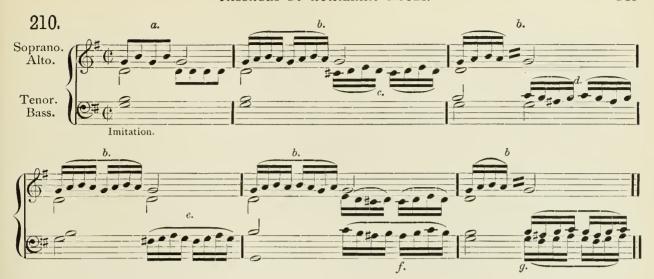
AUXILIARY NOTE FROM ABOVE.

N.B. An auxiliary note from *below* ought to be written a half-tone below the essential note; when from *above*, it may be written a *whole* or *half* tone, just as the key in which it appears may require.

The following example of *imitation* is founded on a *single chord*. The *subject* (or passage for imitation) is formed out of two intervals of that chord; and as these proceed by 3rds, simple passing notes may be introduced: out of these two notes the passage at (b) is constructed. This passage we desire to imitate in the alto; but, as *that* part consists of one *note only*, how shall we effect our purpose? By having recourse to *auxiliary* notes. Thus, the passage at (b) is imitated by the alto at (c), by the tenor at (d), by the bass at (e), by the alto and tenor at (f), and by the tenor and bass at (g). At d, f, and g, the imitation is by *contrary* motion.

^{*} Some of the greatest beauties and most thrilling effects in composition are produced by imitation. This is a branch of the art which young composers should endeavor to attain as soon as possible; it is particularly important to those who study fugues and canons.

[†] See Examples 202 to 208.



N.B. Let the pupil look well to the various examples here given. Precept may do much; but one *short example* will effect more than pages of verbal explanation.

The subject of the following example is the ascending diatonic scale in four parts. *One* interval only of the chord being selected to form the passage for imitation.

PASSAGES CONSTRUCTED ON AUXILIARY NOTES.



It will be observed that the embellishments in the above example proceed by 3rds; they may proceed by 6ths also, as here exhibited:—





At bar I, between the soprano and alto; at bars 2, 3, between the alto and tenor; at bar 4, between the bass and soprano, etc.

All our notes of embellishment have heretofore progressed either by diatonic or chromatic intervals; they shall now be exhibited in another point of view. The following melody at I., bar I, ascends a 5th. Instead of introducing between these intervals simple passing notes, we shall proceed from the first note, C, at once to F₇, as at II., bar I. These notes, because they pass directly between the intervals C and G, are

EXTENDED PASSING NOTES.



All the notes marked (a) are extended PASSING notes.

(d) are simple passing notes.

In the above example, at bar 1, we see that, through the extended passing notes, a new feature or character is imparted to the simple melody; this character we desire to carry through the whole exercise; but, as the melody at bar 2 descends from G to E, it is clear that no extended passing note can find a place there; an auxiliary note must therefore supply the deficiency: these we shall call

EXTENDED AUXILIARY NOTES FROM BELOW;

because they do not pass to, but fall a semitone below the essential note.

At II., D#, in bar 1, and B \(\pi \), in bar 2, as well as all those marked (b), are specimens of the same.

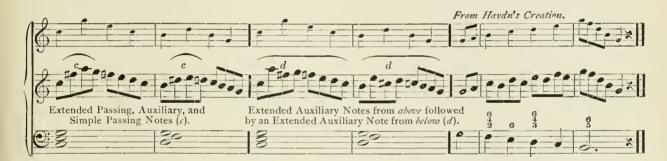
At III., are introduced extended auxiliary notes from above; because they ascend above the *essential* note, and then *descend* upon it (c).

N.B. Carefully examine the notes of embellishment, at II., III., with the simple melody at I., and compare the different effects which they are calculated to produce; for let it be remembered, that it is only by hearing and remarking the variety of effect of these, as well as of all the other notes of embellishment, that a just estimate can be formed of their importance. These, and the like observations, cannot be too often impressed upon the pupil's mind.

The almost infinite variety of modes in which these notes of embellishment may be employed, renders it nearly impossible to establish *fixed* and *infallible* rules for their introduction in every case that may present itself.

The following example, founded on a simple subject, or melody, with its accompanying harmony, exhibits at one view, how all the preceding notes of embellishment may be introduced effectively:--





Hitherto our notes of embellishment have appeared in the soprano and inner parts only; in the following example they are introduced into the bass:—

DIATONIC SCALE DESCENDING.





The two basses, I, II, although founded upon the same fundamental harmony, yet differ widely with regard to their character, occasioned by the employment of different notes of embellishment. The effect produced at I, arises out of the simple passing and auxiliary notes; at II, from extended passing and extended auxiliary notes. And here let it be carefully noticed that, in order to introduce our embellishments at II, we must suppose that bass to have been originally written as at III, where the essential notes of the chord, being introduced in succession, form not only a melody characteristic of the bass, which (as the intervals proceed at great distances) is peculiarly fitted for the introduction of extended notes of embellishment.

When the intervals of a chord are introduced, as at III, in the preceding example, a species of melody arises, the *intervals* of which may be considered as producing a *two-fold* effect; that is, as a secondary *melody*, and as a *secondary harmony*: by the employment of which, a harmony of *four parts* may be made to produce the effect of *five* or even *more* parts. This will be better understood by an example.



At (a), the harmony first appears as usual in four parts.

Bar 1. The soprano ascends to G, and doubles the alto in the octave; that is, the interval representing the part of the alto is made to appear twice in the same chord. This observation may apply to all the others.

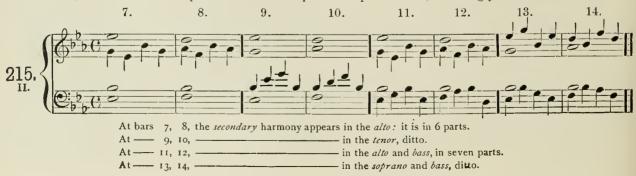
Bar 2. The soprano ascends to F, and doubles the inverted bass: and thus the harmony in those two bars assumes the nature and character of five parts.

At bars 3, 4, six parts.

At 5 and 6 is exhibited the *real* harmony of that which has been *assumed*, the latter of which we shall call

SECONDARY HARMONY;

and, although this "secondary harmony" is not all heard at one and the same time,—as at 5, 6,—nevertheless, it will be found to produce such an impression upon the ear, as strongly to resemble it.



This will suffice to show the principle on which this secondary harmony is established

It may be observed that this *secondary harmony* arising from the peculiar progression or its intervals, is particularly suited for the employment of *extended* notes of embellishment. These we shall now introduce, and exhibit in a variety of forms.

Let us make one observation before we proceed. As *impurity* of harmony must at all times be carefully guarded against, and as the introduction of secondary harmony may easily lead into error in this respect, care must be taken that *the note which is employed as secondary harmony returns first to the original note of the chord* from which it started, *before it proceeds to a note of another chord*.

The subject which we have chosen for a practical illustration of "secondary harmony" and "extended notes of embellishment," is the ascending diatonic scale of C minor, written in the bass, and harmonized.



At bars 1, 2, the secondary harmony appears in the soprano.

At - 3, 4, in the tenor, imitating the soprano by contrary motion.

At — 5, 6, 7, in the alto, imitating the tenor, by similar motion.

Let not the pupil pass unnoticed these *imitations*, which have been effected through the instrumentality of secondary harmony. N.B. The first portion of each bar contains the real harmony.

It will be perceived that the introduction of *secondary* harmony, in the preceding example, has paved the way for the employment of *extended auxiliary notes* from *below*; and thus a *new* and altogether different effect is produced, and passages formed for imitation.



If we minutely examine the above exercise, and compare it with the *preceding*, we shall find that it was through the *introduction of extended auxiliary notes from below* that the soprano received the still *more marked* and *distinct* character which is exhibited at bars 1, 2, and subsequently *imitated* at bars 3, 4, by the alto. It will be perceived that the secondary harmony, bar 1, *descends* from C to G, and our notes of embellishment are introduced accordingly; that is, extended *auxiliary* notes from below.

In the *following* example (observe) the notes of secondary harmony *ascend*, and thus we are enabled to employ *extended passing* notes; by which *again* a *new effect* is produced, and a passage formed in the soprano which is subsequently imitated by all the other parts.

Compare and examine very carefully the following example with the one above: —



The inverted basses of the above examples are figured to show that the essential notes only require to be thus treated.

In the following example, "secondary harmony" is introduced into the bass, intermixed with various extended passing and auxiliary notes.

The pupil is here presented with two specimens of basses arising out of secondary harmony: examine Loth carefully.



The bass, at (a), produced through secondary harmony, may be viewed as the outline or sketch of the following more finished example, in which it is again introduced, embellished with simple and auxiliary notes:—



Observe, the diatonic scale continues in the bass until the end of the third bar when the alto takes up the subject, and continues it to the end with the same notes of embellishment as before.

Examples might be multiplied, and pages of explanation written to illustrate this interesting subject, what has been said, however, may suffice to show, in some measure, the importance of these notes of embellishment,—secondary harmony,—their practical use,—and the variety of effect which they are calculated to produce; reflection and study must complete the rest.

We shall now show how dissonances also may be mixed up and amalgamated with these matters, so as to produce new and still more striking effects.

We know that, according to the *principles* of "secondary harmony," we are permitted to write the tenor and soprano as at I, in the following example. Therefore, on the SAME principle we may resolve the dissonances of the 4th and 9th, as at II.



By keeping in view the above principle (upon which the two *following* examples are constructed) no difficulty can possibly arise in fully comprehending them.

First of all, let the pupil carefully examine the progression of the fundamental basses, which are added and *figured*; for upon this the whole superstructure rests.

Secondly, let him understand that when the *resolution* of a *dissonance* is *delayed*, it is occasioned either by a note of *secondary* harmony or by an *auxiliary* note; and that the *first* is an *essential* note, and the latter is *not*.



Let us first examine the progression of the fundamental basses.

The bass, from bar 1 to 6 inclusive, continually ascends a fifth; therefore, it admits the introduction of the dissonance of the 4th, prepared by the 8th.* The bass, from bar 6 to 10, ascends a 4th; therefore, it admits of the dissonance of the 9th, prepared by the 5th, combined with the dissonance of the 4th, prepared by the fundamental 7th. †

Bar 1. The dissonance of the fourth is prepared in the alto by the 8th.

Bar 2. This dissonance, instead of *directly* resolving into a 3rd (as it ought), *first* ascends by a note of *secondary harmony* to D, and *resolves* as usual. This process produces a little *subject* or *fassage*, which, at bar 3, is *imitated* by the *soprano*, and at bar 4 by the *tenor*.

Bar 5. This dissonance (the 4th) appears again in the alto; but instead of pursuing the same process as at bar 2, an auxiliary note from below (F\$), is introduced, by which the resolution of the dissonance is delayed (similar to bar 2), and a new subject or passage formed, which, at bar 6, is imitated by the soprano.

Let it here be kept in mind that all our *imitations*, up to the present, arose out of the dissonance of the 4th only; because the progression of the fundamental basses was by ascending fifths. Now, however, that progression is changed: the fundamental bass ascends by fourths, and the dissonance of the 9th is introduced.

^{*} See Dissonances, page 84, examples 116, 117, 118. † See Dissonances, page 86 — 87, examples 119, 122, 123.

- Ba: 7. The 9th (F #) is prepared, in the preceding bar, by the soprano; but, instead of resolving direct into the octave, E, it first descends to B (a note of secondary harmony), and afterwards resolves into the octave as usual.
 - Bar 8. The same dissonance is again introduced; but here it ascends, first to F, a note of secondary harmony, and then resolves.

Bars 10 and 12. The dissonance of the fourth (prepared by the fundamental 7th), before its resolution, descends first to an auxiliary note from below, and then resolves.

We give the following example (which is introduced precisely upon the same principle and upon the same fundamental harmonies as the preceding) as a further illustration of what may be effected by a "regular dissonance," "secondary harmony," and various notes of embellishment.

N.B. The present example commences and ends in a major key; the one preceding commences and ends in a minor key. Let the pupil notice well the difference of effect.



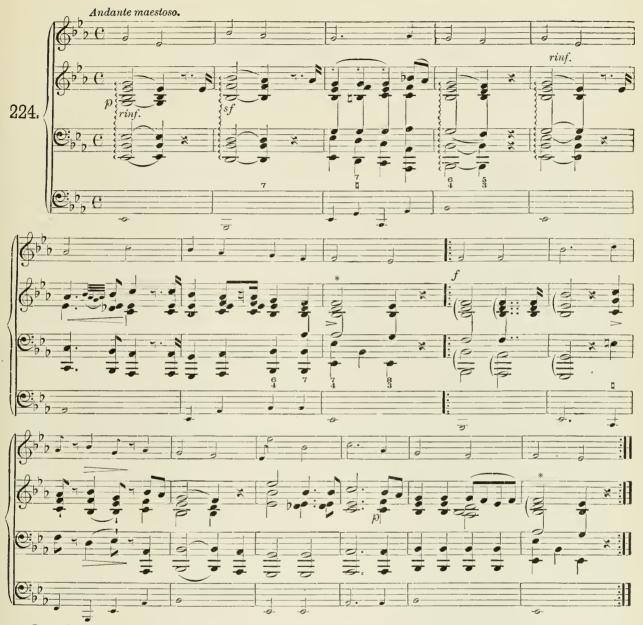
It may be noticed that, in the former example (222), from bar I to 6, the dissonance of the fourth only is introduced. Here, however, we have introduced the dissonance of the 6th in conjunction with the fourth.

- Bar 2. The 6th appears in the tenor (prepared in the preceding bar by the 3rd).
- Bar 3. This dissonance appears in the alto, combined with the soprano; bar 4, in the soprano, combined with the tenor; and bar 5, combined with the alto and tenor.
 - Bar 3. The bass proceeds by auxiliary notes, and secondary harmony, imitated by the soprano at bar 4.
 - Bar 5. The bass proceeds by simple passing notes, accompanied by the alto.
 - Bar 6. The bass is accompanied by the soprano.

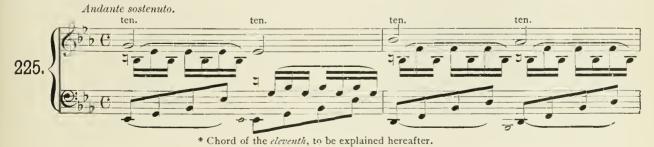
To extend our analysis is needless. Let the pupil (if anxious to become acquainted with this interesting and important subject) examine and analyze it, *comparing example* with *example*, BAR by BAR. It will amply repay the labor.

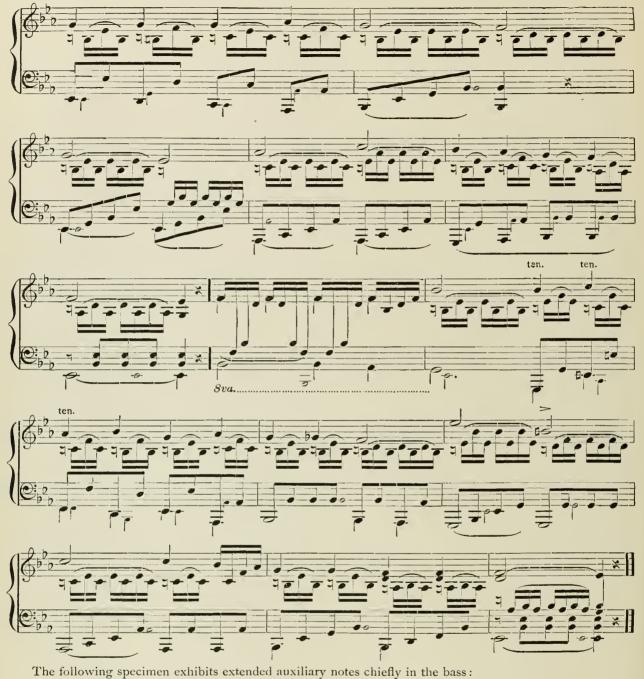
In order to render this subject still more interesting and practical, we will take a simple melody, harmonize it, and then arrange it for the pianoforte, introducing these notes of embellishment, with the usual marks of expression, to give it all the character of a finished composition.

It is necessary to observe that, when writing for the *pianoforte*, we are frequently obliged, in order to produce effects *peculiar* to that instrument, to *double* notes of the harmony; in which case, the rule respecting consecutive *octaves* is dispensed with; but they are not permitted to occur between the extreme parts, that is, between the *lowest* note of the bass and the highest note in the treble. The rule relating to consecutive 5ths remains in full force, and must be strictly observed.



Out of the harmony of the preceding example we give a specimen, in which the simple melody is preserved, and a variation extracted from the alto and tenor, with secondary harmony in the bass.









The variations shown in the above specimens are extracted from the bass and inner parts of the harmony; and the *melody itself* is never absent, but, on the contrary, sustains a very prominent part.

Variations, however, are often composed on the harmony alone, with which a melody is accompanied, the melody itself being absent (though still in existence). In this case, it is necessary that the same harmony, the same modulation, and even the same inverted basses, with which the melody was originally accompanied, should be retained; no matter under what form the passages may appear.

These observations have reference only to variations constructed on a simple melody. In a word, a variation written according to this rule will always permit the original melody to be played with it, without either injury to the purity of the harmony, or interference with the passages of which the variation is composed.

The following variation, composed on this principle, needs no further comment: -





We shall conclude this interesting subject with the following example, which, in its concise and compressed form may be viewed as a *summary* or *recapitulation* of what has been stated in the preceding pages. This exercise is calculated to impress upon the mind of the pupil still more forcibly the vast *importance* of these notes of *embellishment*, as well as the extent to which, by judicious treatment, they may be introduced among the intervals of melodies, and the influence they exercise in a composition.

The melody at I, in the following example, consists of three notes only—E, C, B, accompanied by the harmony of the tonic and dominant and their inversions. At III is the cadence, which concludes the whole. It will be perceived, that as the four parts at II may, through the instrumentality of extended harmony, interchange places among themselves, a door is opened for the introduction of notes of embellishment, producing imitations in all these parts. It is needless to say more on this subject; the example is before the pupil, study it with care and attention—It is one of importance.

We shall suppose the example to be written for the first and second violins, tenor, and bass.







We shall only further remark, that if the pupil has carefully studied the present subject, he cannot help being struck with the *endless* variety which these notes of embellishment are calculated to produce. The best advice that can be given, is to examine the works of the most *classical composers*, and observe how they have treated the same subject on different occasions. In writing the *exercises*, let the harmony be written in four parts before a single note of embellishment is introduced, which will prevent many errors.

RETARDATION,

OR

ASCENDING DISSONANCES.



It has been shown,* that when an interval of a chord in a gradually descending melody is kept back in its progression, it produces a dissonance, called a dissonance by suspension.

However, a melody may ascend as well as descend; and when an interval of a chord in a gradually ascending melody is arrested in its course, it also produces a dissonance; but this we call an ascending dissonance, or RETARDATION.

Here, then, we have two species of dissonances: suspensions and retardations, widely differing from each other as regards their construction and effect.

We know that when the *dominant* chord proceeds to the *tonic*, the 3rd ascends directly to the octave of that tonic; as at I in the following Ex. †:—



But suppose B, the 3rd of the dominant chord, instead of proceeding direct to the octave (as at I), to be continued upon the following tonic (as at II), it becomes an ascending dissonance (the 7th), which must afterwards ascend or resolve into the octave of the tonic. At III, the remaining notes of the tonic chord are added, and thus form a chord (usually called the chord of the sharp seventh).



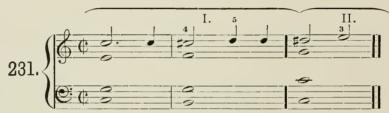
^{*} Example 112.

[†] The above may be considered as an epitome of all artificial dissonances—artificial, because they are not found in nature, as is the rundamental 7th. Re-peruse what has been said, page 87 (163)

If, in this ascending progression, the 5th of the dominant (D), instead of ascending to the 3rd of the tonic (as at IV), be continued (as at V), it produces the ascending dissonance of the 2nd resolving into the 3rd. If this dissonance of the 2nd (at V) be combined with the 7th (as at VI), it produces the chord of the $\frac{7}{2}$.

It will be observed that the same note (D), which in an ascending melody (as at V) is a retardation, may in a descending melody (IX) become a dissonance by suspension. To ascertain to which species it belongs, it is only necessary to examine its progression; if it ascends (as at V), it is a retardation (2nd into the 3rd); if it descends (as at IX), it is a suspension (9th into the 8th).

Having fully explained the nature of suspension and retardation, we proceed to the dissonance of the 4th into the 5th, which is not quite so satisfactory, in its effect, as the two preceding ones, occasioned by an ambiguity as to its final resolution; it is impossible to decide whether it is a dissonance by suspension or retardation until the resolution has taken place (as at X); the 4th appears in the soprano, which (as a suspension) we know cannot be admitted, because the 3rd of the chord is in the tenor; and, as a retardation, the matter is exceedingly doubtful; therefore, in order to prevent this ambiguity in the resolution of the chord, the dissonance (the fourth) is frequently raised a minor half-tone, as at I, in the following example:—



by which its ascending resolution is anticipated, and all doubts respecting its identity removed.

In like manner, the retardation of the 2nd may be raised a semitone, and thus a similar ambiguity as respects the nature of that dissonance is avoided; for when the 2nd is raised a half-tone (as at II) it is impossible to mistake it for a dissonance of the 9th.

A very important rule, with reference to the employment of dissonances and preservation of the purity of the harmony, should, on the present occasion, be recalled to mind; viz., "that a dissonance and the note which that dissonance suspends, must not be heard at one and the same time; a dissonance is the temporary representation of the consonance into which it subsequently resolves.*



In bar 2, the C sharp retards D, the 5th in the soprano: therefore the D in the tenor cannot be admitted. The same error occurs also in bar 3, where the D sharp (the 2nd) retards E (the 3rd) in the soprano.

Q. Can the 3rd E in the tenor be admitted? — Why?

Both these errors are avoided at bars 4 and 5.

The following example exhibits a practical illustration of ascending dissonances intermixed with passing and auxiliary notest:—

* See note, bottom of page 87.

[†] Re-peruse what has been said on passing notes by half-tones, example 205.

RETARDATION. 165



This subject is the ascending diatonic scale, supposed to be written for two violins and a bass; it commences with the first violin, and is continued for three bars, when it is taken up by the second violin, imitating the first a fifth below. The bass in the meanwhile performs a melody of its own. It is unnecessary to enter into an analysis of the ascending dissonances; the example is purely practical, and speaks for itself.

We shall, in preference, give the same example in *four parts*, viz., for two violins, tenor, and bass. Here, more care is required to avoid ambiguities than was necessary in example 233.



The student will examine carefully and perform the two examples, comparing one with the other, and particularly noticing the variety of the imitations.

In the latter example it will be perceived that the scale commences with the *1st violin*, but is continued in that part for only *three bars*; after which it is taken up by the second violin for the following three bars, by which an imitation between these two parts is effected.

It has been fully shown that all dissonances, whether by suspension or retardation, have been produced by one simple circumstance, viz., by arresting the natural progress of the intervals of a melody, while ascending or descending. These dissonances therefore are in fact artificial; they do not exist in nature; but why are they introduced? They are introduced to heighten the effect of the returning consonances, and thus produce in a greater or less degree that light and shade in a composition which is so striking in the works of great masters. A careful study of this branch of harmony is strongly recommended; indeed, the importance of it must, ere this, have been evident to every intellectual student.

When we treated on the chord of the minor 9th,* it became necessary to draw particular attention to two intervals of the chord of the fundamental 7th, viz., the 3rd and 7th; the former ascending a half-tone, the latter descending a half-tone; † by these two intervals ascending and descending by half-tones, the whole machinery of harmony is guided.

In order to impress this strongly on the mind, we shall repeat here a portion of example 154, the whole of which, however, the pupil is strongly urged again to peruse.



- a. Exhibits the essential notes of the chord of the fundamental 7th.
- b. The ascending dissonance of the 7th. (Retardation.)
- c. The descending dissonance of the 4th. (Suspension.)

Now observe. If these two opposite dissonances are united (as at d), they will produce a new chord, called

THE CHORD OF THE ELEVENTH.

Let it be well remarked, that it is through the *instrumentality* of these two *principal intervals* of the fundamental 7th that this chord is produced. We may introduce the dissonance of the 9th also (as at e); ‡ but the chord is not thereby changed, it still remains the same in *name* and *character*, or we may introduce a retardation, the 2nd ascending into the 3rd (as at f). Here the note which at (e) is a dissonance by suspension (the 9th into the 8th), is at (f)a retardation, the 2nd into the 3rd.

Again, we may have both the suspension and retardation at the same time (as at g), where the 2nd in the soprano ascends into the 3rd, and the 9th in the tenor descends into the 8th; and if we add the octave to the dominant, the chord of the 11th will appear (as at h). If the question be asked, what the chord of the 11th really is, the reply is simply, The chord of the dominant or fundamental 7th placed over its tonic: for instance, take the bass note Bb as a tonic (the dominant of Bb is F) write the chord of F, with its fundamental 7th, over the Bb, and the chord of the 11th is produced: its resolution follows as a matter of course.

Why is this called the chord of the 11th? The chord takes its name from the dissonance of the 4th, prepared by the 7th, § because this 4th is the 11th interval, counting upwards, from any given bass. In thus counting upwards, we must necessarily pass beyond the 7th and 9th before we can arrive at the note which constitutes the 11th; so that, in this case, the interval in question is not a 4th, but really and truly an 11th.

CHORD OF THE ELEVENTH, PREPARED.

Hitherto, the chord of the 11th has appeared on the *accented* part of the bar, having been prepared on the unaccented; but this is not necessarily the case, as it originates in the chord of the fundamental 7th, which requires no preparation, so the chord of the 11th is entitled to the same privilege: this is exhibited in the following example, where all the chords of the 11th are unprepared.

CHORD OF THE ELEVENTH, UNPREPARED.



In bars 1 and 2 the melody ascends; consequently, the retardation of the 2nd is introduced, figured with a 2 (thus, $\frac{7}{4}$); but as, at bars 3 and 4, the melody *descends*, the suspension of the 9th is employed and the figures required are $\frac{9}{4} - \frac{8}{3}$; the chord of the 11th may therefore be introduced, prepared, as in example 235; or unprepared, as in example 236.

The following is a practical illustration of this chord with both these characteristics:—

THE CHORD OF THE ELEVENTH PRACTICALLY ILLUSTRATED.



In the preceding example all notes of embellishment have been carefully avoided, and other dissonances excluded, that this chord may appear in the simplest possible form.*

N.B. When the chord of the 11th is employed UNPREPARED, and the melody ascends, the note which represents the fundamental 7th may ascend.

At bar 5, the fundamental 7th ascends in the alto, and at bar 6 it ascends into the tenor.

The following example is in substance the same as the preceding; but here it is embellished with passing and auxiliary notes; and the student will be amply repaid for the trouble of a careful comparison:—

THE SAME AIR AS THE PRECEDING, EMBELLISHED.



* In examples 237 and 238, bars 2, 5, 6, 13, the chord of the 11th is unprepared.

Bars 8, 12, 16 _______ prepared.



Take this as a general observation on the figuring of this chord of the 11th.

The 3rd and 7th of the dominant chord are its essential intervals. Now, in the chord of the 11th, these two intervals become the 4th and the 7th, which must always, without exception, be figured; they must never be omitted.

The various modes of figuring according to circumstances, will appear thus; commencing with the chord of the sharp 7th, as that chord naturally leads to the chord of the 11th.

Chord of the sharp 7th — figured 7, and resolved into	8 *
Same chord when the 2nd is added, $\begin{cases} 7 \\ 2 \end{cases}$	8† 3
Chord of the 11th figured, $\begin{cases} 7 \\ 4 \end{cases}$	8 3 8
Same chord with the 9th added, $\cdot \cdot \begin{cases} 9 \\ 7 \\ 4 \end{cases}$	8 \$
Ditto when the 2nd is added, \ldots $\begin{cases} 7 \\ 4 \\ 2 \end{cases}$	8
When the chord of the 11th appears with all its suspensions and retardations, it is figured, \dots	8 3¶

And whether we remove the 9th or the 2nd, or both figures, the chord still remains the chord of the 11th. This may suffice to show the nature and practical application of this important chord, and its derivation from the chord of the fundamental 7th, which is derived from nature.**

It will be perceived, that, when the chord of the 11th is introduced unprepared, as at a, in the following example, the original fundamental bass ascends a fifth; and as that progression admits the introduction of the 4th into the 3rd, and 6th into the 5th,†† it follows that either of these dissonances may very effectively be combined with the chord of the 11th.



^{*} Ex. 235, b. † Ex. 235, f. ‡ Ex. 235, d. § Ex. 235, e. || Ex. 235, f. ¶ Ex. 235, g.

^{**} Ex. 63, Harmonics. †† Dissonances, page 90.



In the preceding Ex. 240, at b, the dissonance of the 6th is combined with the chord of the 11th; and at c, the dissonance of the 4th. The introduction of the dissonances thus gives rise to a very extraordinary anomaly, viz., dissonances becoming consonances and resolving into dissonances. For instance:—

At b, in the above example, the 6th, united with the chord of the 11th, forms with the bass a consonance, and this resolves into a dissonance (the 9th).

At c, the dissonance of the 4th from the octave of the bass, resolves into a dissonance (the 7th).

The following is a melody harmonized in four parts, in which are introduced both the above-mentioned dissonances upon the chord of the 11th.

It is not necessary to expatiate upon this example. The student must hear it and particularly observe the difference of effect produced by the 6th and 4th combined with the 11th.



At a, dissonance of the 6th. At b, dissonance of the 4th. At c,

CHORD OF THE THIRTEENTH.

The construction of the chord of the 13th is in every respect similar to that of the 11th.

By placing the chord of the 9th (whether major or minor) over its tonic bass, the chord of the 13th will be produced.

In the following example, bar 1, is exhibited the chord of the *major* 9th, and at bar 4, the chord of the *minor* 9th; at bars 2 and 5, these chords are placed over their respective tonics, and thus produce the chord of the 13th; as the figure 4 in the chord of the 11th expresses the original interval, which gives name to the chord (viz., the 11th), so the figure 6, as it expresses the original interval (the 13th), is indispensable when we desire to express by figures the chord of the 13th. Nor must the 4th be omitted, because that interval is the

representative of the 11th, as the 6th is the representative of the 13th; this will be seen in the following example:—

		1.	2.	3.	4.	5.	6.
	(8	97	13-5-1	000	b-g-9 ug	13929	
242.		97	6	8 5 3	b9 U	#7 66 4	8 5
			0	a			

Indeed, if the chord of the 11th be well understood, no difficulty can possibly be experienced in comprehending that of the 13th. Examples illustrative of this subject, if carefully studied and examined by the student, must ever be the compass by which he will be guided unerringly through all the mazes of harmony; however, a treatise such as the present professes to be, can never be comparatively useful without abundant examples, one of which sometimes effects more to illustrate the subject than pages of words.

That the chords of the 11th and 13th arise out of a combination of dissonances by suspension and retardation, will be seen by the following:—



At 1, are two suspensions, 6 (original 9), and two retardations, 7 (original 3), 4 (original 7),

At 2, are three suspensions, 6, and one retardation, the 7th.

At 3, are three suspensions, $\frac{9}{6}$, and two retardations, $\frac{7}{2}$ (original 3), 4

N.B. When the chord of the 13th is immediately preceded by the chord of the fundamental 9th (as in the above example), the chord is prepared. When it is *not* immediately preceded by the fundamental 9th, (as in the *following* example), then it is *unprepared*, and may be treated precisely as the chord of the 11th.



The preceding example 244 is the diatonic minor scale of C; but, in order to mark the interval of the zhord of the 13th as much as possible, no signature is employed to denote the key; the accidentals are all expressed where required; the fundamental basses are also added, which may be found useful in more respects than one.

Before we proceed to give a lengthened example on the employment of this very important chord (the 13th), it will be necessary to make the student acquainted with the chords of the sharp sixth and compound sharp sixth.

Q. What is the chord of the sharp sixth (#6)?

A. IT IS NEITHER MORE NOR LESS THAN THE SECOND INVERSION OF A DOMINANT CHORD,
THE INVERTED BASS BEING LOWERED A MINOR SEMITONE.

In the following example (at α) is exhibited simply the 2nd inversion of the chord of the dominant:—



Let us not forget that $A \sharp$ is the natural 6th to the inverted bass $C \sharp$; * but the instant we place a \sharp before the bass note $C \sharp$, we lower that note a half-tone, and $A \sharp$ is now changed (as at δ) into a sharp 6. $F \sharp$, the fundamental bass, remaining unchanged.

Having now fully explained the principle upon which this chord is founded, we will point out some peculiarities respecting it, which will be found interesting.

If we analyze this chord, we shall find that it contains within itself the *principal intervals* of two distinct fundamental 7ths \dagger (see c d); the former would lead the ear to the key of B \sharp , and the latter to the key of G; but when heard both together (as at b), the chord produces on the ear an effect not at all satisfactory. Every one may convince himself of this by striking the chord first as at a, and then as at b. To avoid this *ambiguity*, one of the intervals must be removed—but which of them? \dagger

The note A # cannot be dispensed with, because it is the *principal* interval in the dominant chord, viz., the 3rd. E cannot be removed, because it is the fundamental 7th. The only interval therefore that can be dispensed with is the F #, the octave to the fundamental bass. Let us take away this interval, and, in order to preserve the four parts complete, double the fundamental 7th (as at e), and all will then be correct.

We shall now give a few hints respecting the proper management of this chord (the sharp sixth) in its different aspects.



WHEN THE CHORD APPEARS AS AT 1 IN THE FOLLOWING EXAMPLE, THE SEVENTH IN THE SOPRANO MUST DESCEND AND THE TENOR ASCEND.

SHOULD THE SEVENTH BE DOUBLED IN THE ALTO AND TENOR IN UNISON, THE ALTO MUST ASCEND AND THE TENOR DESCEND (AS AT 2).

SHOULD THE SEVENTH BE DOUBLED IN OCTAVES (AS AT 3), THEN THE ALTO MUST DESCEND, AND THE TENOR ASCEND.

This chord is frequently written as at 4 and 5, by the old church writers, and produces a very fine effect.

The key of A requiring 3 sharps, F sharp is the natural 6th.

Sometimes called the leading note.

The most proper place for the introduction of the sharp 6 is when we are in a minor key, and desire modulate to the *dominant* of that minor key; as in the following example:—



Here we are in the key of C minor — we desire to modulate to G (the dominant) by the \$6. This we do in the usual simple way by the 2nd inversion; and, having lowered the inverted bass a half-tone, resolve the chord.

At 2, having modulated to G, from hence we proceed to F minor, and (by the #6) to C. This will suffice to show the origin and construction of this chord, and its principal use in modulation.

The contemplation of the chord of \$6 naturally leads us to another of still greater importance; and if the former have been well understood, not the slightest difficulty will occur in fully comprehending this one also, because both are founded on the same principle.

If to the chord of the sharp sixth we add the minor 9th, it will produce what we call

THE COMPOUND SHARP SIXTH, FIGURED, \$6.

The following example (at 1) exhibits the chord of the #6 as usual, with its resolution.

At 2. the minor 9th, E, is added.

Let the student carefully remark that no radical change has been made—the intervals proceed just as before—the fundamental bass is the same; in one word, the chord of the compound 56 is nothing more than the 2nd inversion of the chord of the minor 9th, with the inverted bass lowered a semitone.



It is necessary to observe that, as the bass in this chord (at 2) is obliged to descend a half-tone, and as the 9th (which here by inversion becomes the 5th) must also descend, consecutive 5ths would be the consequence; but these improper progressions must be avoided, which is very easily done, either by letting the 9th descend to the 7th in the same bar (see 3), or by suspending the following 5th by means of the 6th * (see 4).

This chord, one of the most useful, especially in modulating, has been treated in a variety of ways hy different authors: which diversity of opinion need not in the least surprise us, as it arises from an ambiguity in the chord itself. It is not easy to convey exactly what we mean here by mere words; we shall be better understood by a practical example, thus: strike the chord at 1 (in the following example 249) without being preceded or succeeded by any other chord, then the chord at 2. There is no difference between these two chords, as far as can be judged of by the ear; yet, grammatically, they differ as widely as the east and west.

How are we to distinguish the difference?

Answer. — By investigating the progression of the fundamental bass. It is only thus that we can discover the etymology of any chord, and its grammatical application.

* Haydn has employed the latter mode. Cherubini, however, in one of his late church compositions, has, without any scruple, permitted these consecutive fifths (as at 2).

Let us examine the two chords *just* heard, but not seen.



At 1, G = and D are the principal intervals of the fundamental 7th, indicating (as thus written) that it is derived from the chord of the minor 9th. E therefore is its proper fundamental bass, and thus the modulation proceeds to A. See 4, 248.

At 2, the AD and D, on the same principle, indicate that it is the chord of the fundamental 7th to BD; the modulation therefore goes to ED; which is a key diametrically opposite to the former. Very striking effects are produced by the employment of this chord, of which some specimens will be exhibited when we arrive at equivocal modulations.

We shall now give a short exercise on the preceding two chords, which, from what has been so fully stated respecting their nature and application, will require no further explanation, particularly as the fundamental basses are uniformly added.



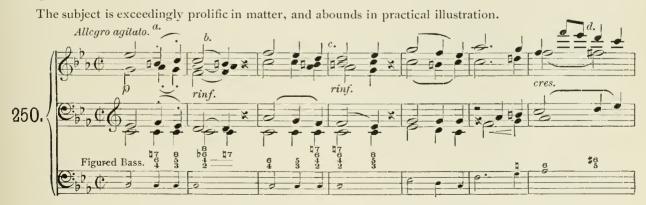
We shall only remark that at bar 2, E[†] (the 5th), instead of descending to the 5th in the third bar (which would have produced consecutive 5ths), is suspended at bar 3 by the 6th. The 6th, however, is here changed into the major, which produces a striking effect.

Bar 8, chord of the \$6. Bar 4, compound sharp sixth \$5.

Bar 9, compound \$6, which resolves at bar 10 into a major chord (see bars 2, 3).

We shall now resume the subject of the chord of the 13th, which was interrupted after example 244, for the purpose of introducing the pupil to the #6 and compound sharp 6th #6.

The following lengthened example contains the chords of the 11th and 13th — sharp sixth and compound sharp \$\frac{6}{5}\$ in a variety of forms, incorporated with other harmonies, so as to constitute what may be called a finished composition. Before the student plays it (and it is expected that he will do so), he should study the subject well, by critically examining every bar. It is written for the pianoforte, with an additional staff for the figured and fundamental bass.









ANALYSIS.

- At a. Chord of the 13th unprepared.
 - b. Chord with the dissonance of the 4th unprepared.
 - c. Chord of the 13th prepared.
 - d. Chord of the 13th compound sharp 6th 5.
 - e. Chord of the 13th prepared.
 - f. Commences on the relative major chord of 11th.
 - g. Chord of 11th, dissonances of 4th added.
 - A. Chord of 13th arising from major 9th.
 - i. Chord of 13th followed by minor 9th.
 - k. Compound sharp 6th \$6.
 - m. Chord of the 13th, 6th added.

FINAL AND OTHER CADENCES.

It has already been stated that, in consequence of the frequent natural occurrence of the final cadence, composers have been induced not only to seek for variety, but have often endeavored to avoid the final cadence altogether.

A cadence is sometimes made in some key different to that into which we had modulated; this we call AN IRREGULAR CADENCE.

Let us suppose the student sitting at the pianoforte, playing through a course of modulation, and introducing such cadences as he is already acquainted with; suppose him to have modulated to the key of D, as at (I) in the following example:—



In the preceding example (251) the pupil commences in the key of D major at I. If, instead of closing in that key, he were to make a cadence in the key of its *dominant*, it would be an irregular cadence; — irregular, because it does not close in the key to which modulation has been made.

- At II, he modulates to F minor, and makes a cadence in the relative major.
- At III, he modulates to Ab, and makes a cadence in the relative minor.
- At IV, D minor is the key, and a cadence is made in A minor.
- At V, a modulation to D minor cadence in Bb.

^{*} Before the student proceeds, he is strongly recommended to peruse once again the commencement of the subject of cadences (page 95); of which the following may be considered a continuation.

N.B. Let it be observed that the *irregular cadence* must always bear some relation to the key to which we modulate.

It occurs frequently, that instead of proceeding direct from the tonic to the subdominant, a minor chord is first introduced, whose bass, when we are in a major key, is a minor 3rd below the tonic, as in the following example (I). On the contrary, when we are in a minor key, this bass must be a major 3rd below the tonic (II).



When the cadence is made in a *minor* key, the added sixth may be written *minor* instead of *major*. See III, following



At IV, the added minor 6th is doubled and the 5th omitted.

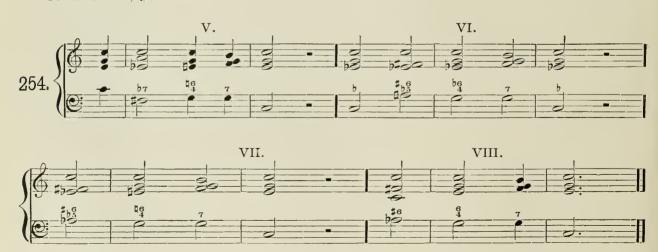
N.B. This chord is eminently calculated to express a feeling of the most poignant grief and sorrow, and should be sparingly used.

Sometimes a cadence is written as at (V) in the following example, being the first inversion of the minor 9th (diminished 7th).

Or as at VI, 2nd inversion of the same chord.

Or as at VII, compound sharp $\frac{#6}{5}$.

Or as at VIII, #6.



In the following modulations, the preceding cadences are introduced: -





IMPERFECT CADENCE.

The final cadence, after frequent repetition, will necessarily lose much of its effect; because the ear, being accustomed to its regular indications, will contemplate its arrival, and a *certain degree* of indifference will arise. Instead, therefore, of allowing the chord of the $\frac{6}{4}$ to resolve upon the fundamental chord of the dominant, the third inversion of that chord, $\frac{6}{4}$ may be introduced, by which the ear will be disappointed in its expectation, and a higher degree of interest be excited.



FALSE CADENCE.

Another kind of deception is sometimes put in practice.

Instead of the resolution of the chord of the fundamental 7th another chord may be suddenly introduced.



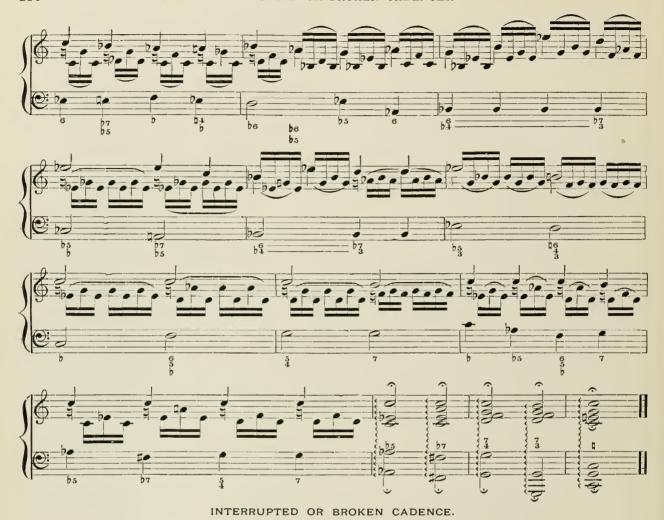
At α , the dominant ascends a whole tone to A, which must be a minor chord: the bass, in a false tadence ascending a whole tone, can only be employed in a major key.

We may also allow the bass of the dominant to ascend a half tone, as in the following example (at a). In which case, the concluding chord of the false cadence must be major.

N.B. "WHEN WE ARE IN A MAJOR KEY, THE FALSE CADENCE MAY BE PRODUCED BY THE BASS ASCENDING EITHER A HALF OR WHOLE TONE;" BUT,

"WHEN WE ARE IN A MINOR KEY, THE BASS CAN ASCEND ONLY A HALF TONE." (b)





Instead of introducing a *final* or *false cadence*, we may make a *sudden stop* after the dominant, placing a *rest* instead of the tonic, as in the following example (a), after which we may proceed as pointed out at b, or as already recommended in example 259.



IRREGULAR FALSE CADENCE.

In the preceding examples of *false cadences*, the intervals of the dominant chord proceeded uniformly into *consonances*; a false cadence may, however, be constructed *so*, that these intervals *shall not* proceed into consonances.

In the former false cadences, the bass ascended a whole or half tone, direct to its fundamental bass. The bass in the following example, on the contrary, does not ascend, but descends a major semitone; neither does it descend into a fundamental bass, but into the first inversion of the minor 9th; viz., diminished 7th.



At a, the 3rd ascends to the fundamental 7th, and the 7th descends to the minor 9th.

At b, the 5th ascends, by which the 9th is doubled.

At c, the 3rd is permitted to descend.

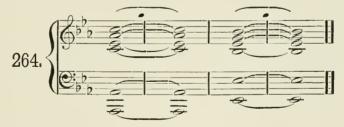
SUSPENDED CADENCE.

If, instead of proceeding with the dominant chord immediately to the tonic, we should first make a few protracted modulations and then close, the cadence will be suspended.



GREAT CADENCE.

In the perfect final cadence, the tonic is always preceded by the dominant. In the great cadence, on the contrary, the tonic is preceded by the subdominant.



This cadence is usually employed in sacred music in the word Amen! It produces an effect calculated to create in the mind a feeling of reverence and awe.

EQUIVOCAL MODULATION.

In order to form a clear and distinct idea of the principles on which these modulations are established, a few preliminary remarks will perhaps be necessary. It has frequently been observed that the two principal intervals of the dominant 7th, in their progression, insensibly lead the ear towards the chord of its tonic; the 7th having a tendency to *descend* and the 3rd to *ascend*. This incessant inclination of these two intervals to

proceed thus will be found on investigation to be occasioned principally (if not entirely) by the 3rd in the chord being major, for were we to make the 3rd minor, this inclination would immediately cease, as will be evident on performing the following example:—



The chords at I, II, III, having minor 3rds, no expectation is excited in the mind that these 3rds ought to ascend, although each chord contains a fundamental 7th; the ear (as it were) remains passive, and without the smallest reluctance permits these 3rds to be changed in the course of their progression into 7ths. At IV, however, the case is very different, for the 3rd (G) being major, the ear immediately expects this 3rd to ascend, and the chord of the tonic (A) to follow: thus the chord of the minor of at (V), having a major 3rd must necessarily proceed to its tonic (A); at VI, to D minor; and at VII, to G minor. Now let us recollect, that this important interval forms a major 3rd with the fundamental bass only, and with no other interval. If, therefore, the fundamental bass be taken away, no major 3rd will be found in the chord to guide or direct our ear. See VIII, IX, X. We are left, as it were, in complete uncertainty as to where the chord will proceed; for the remaining intervals of the chord (after the fundamental bass has been removed) are all minor 3rds, no one of which possesses any peculiar power or quality to guide the ear. But, if we lower any one of these four intervals of the chords at VIII, IX, X, a half tone, it will produce a major 3rd, giving thereby a decided direction to the course of the modulation (which was before equivocal). Now as the interval thus lowered will be the dominant of the key to which we modulate, and as each of these four intervals may alternately be lowered a half tone, it follows that an equivocal chord may be converted into four different dominants, and may consequently modulate to four different keys. The three remaining intervals of the chord undergo no alteration, except what may be occasioned by an enharmonic change, which may perhaps be found necessary when once the dominant is established.



At r, is the chord of the diminished 7th. It has no decided character but what it receives from the fundamental bass, which has been placed under it, by which the modulation goes to D minor.

The C#, in the inverted bass at 2, is at 3 lowered a semitone to C#, and thus E (which at 2 was a minor 3rd) is changed to a major 3rd; and as the C# is the dominant to the key of F, we modulate to that key at 4.

N.B. All the rest of the intervals remain as before.

Here we see that by only *lowering one* interval of the chord of the diminished 7th, we are enabled to modulate to F instead of D minor.

At 5, the chord again appears as originally written at 1, but at 6 the E is *lowered* a half tone to E \flat (forming thus a major 3rd with G), and as E \flat is the dominant to A \flat , we modulate (at 7) to that key, instead of D *minor*.

N.B. All the intervals remain as before, except $C \sharp$, which must be changed enharmonically to $D \flat$; because the fundamental seventh to E is $D \flat$ and not $C \sharp$.

At 8, the chord appears again written as at 1. The G is *lowered* at 9 a half tone to Gb; and as Gb is dominant to Cb, we modulate (at 10) to *that* key instead of D *minor*.

N.B. Two intervals must here be changed enharmonically, viz., E to F b, and C # to D b. The reason is obvious.

At 11, no change of modulation has taken place, for, by lowering (at 12) the Bb to A, we produce the same fundamental bass as at 1: the only difference is, that, as the minor 9th is removed, we have modulated to a major, instead of a minor key.

N.B. Any inversion of the minor 9th may be thus employed, as well as the diminished 7th, instances of which are given in the following example:—





In the preceding example -

At 2, a demonstration is made to modulate to D minor, by the third inversion of the minor 9th; but by lowering G (the inverted bass) at 3, the half tone to $F \sharp$, a modulation is effected to $B \sharp$ minor (at 4).

At 5, a demonstration is made to modulate to A *minor*, by the first inversion of the minor 9th; but B \sharp being *lowered* (at 6) a half to B \flat , the modulation goes (at 7) to E \flat .

At 8, we make a demonstration to modulate to F minor, by the second inversion of the minor 9th; but, the B\$ (at 9) being lowered to A, the modulation proceeds (at 10) to D minor.

At 11, the demonstration is made to C minor; but (at 12) B # is lowered to B\$, and we modulate (at 13) to E7.

Although the ear cannot recognize any change having taken place between the chords at 14 and 15, when played on the pianoforte, yet if we examine the fundamental basses of these two bars, it will be evident, that in order to modulate to G minor (at 16) this alteration of the chord became necessary; for as the dominant to G is D, and not F, we could not have modulated directly from the chord at 13 to G minor at 16: it would have been ungrammatical, as modulating without a dominant.

At 20, we make a demonstration to modulate to B‡; changing this determination, however, by lowering the A‡ to A‡ (at 21), we make a demonstration to modulate to D; here, however, the course is again changed, by resuming the dominant F‡ (at 20), and we seem to modulate once more to B‡; instead of which, however, we lower the C‡ (at 21) to C‡, and modulate (at 23) to F.

The preceding exercise, which is written for the pianoforte, abounds not only in secondary harmonies, extended, passing, and auxiliary notes, but is likewise calculated to point out some of those contrivances in a composition by which a series of modulations or progressions may be made pleasing and interesting; for example: from the commencement to the end of bar 12, the right hand plays variations, founded on secondary harmony, interspersed with extended, passing, and auxiliary notes, while the left hand accompanies this variation by the simple chords. In order to produce still more variety, the right hand, from bar 13 to 23, plays a simple melody, without the least embellishment, while the left hand plays a variation founded on the intervals of the chord. At bar 23, the right hand again commences a variation, the left hand accompanying as before. The example concludes with a cadence, commencing at bar 28, in which the minor 6th has been introduced.

EQUIVOCAL MODULATION BY THE COMPOUND SHARP SIXTH #6

This chord is another powerful agent, which may be employed with great effect in producing an equivocal modulation.

If we lower the bass of any inversion of the chord of the minor 9th a *minor semitone*, the chord of the $\frac{\#}{p}$ 5 will be produced, after which we can modulate as already explained in examples 248 and 249.

N.B. We must be careful not to mistake *this* chord for one of those just described in example 266; because the note which was there lowered became a *dominant*; whereas in the present case, it becomes a false 5th, and, (being the bass) is the second inversion of the dominant chord.

In the following example (at bar 2), is the first inversion of the minor 9th. The bass being thus lowered (at 3) a semitone, the $\frac{\#}{5}$ is produced, and thus instead of modulating to A minor, we modulate (at 4) to F# major.



The following example will show the application of this method or treating the chord, which will be found particularly effective when introduced immediately after the imperfect false cadence:—



DECEPTIVE MODULATION-IN WHICH THE FUNDAMENTAL SEVENTH RESOLVES INTO THE OCTAVE.

It cannot be too frequently impressed upon the mind of the learner, that the chord of the fundamental 7th has a natural tendency to guide the ear to the *chord of its tonic only*. When, therefore, either of the principal intervals of the dominant chord (*viz.*, the fundamental 7th, or 3rd), do not proceed thus, though they may resolve into consonances, a kind of deception is practised.

In the following example, at 1, the 7th of (G) the fundamental bass descends as usual, but instead of proceeding to the third of its tonic (C), it falls, at 2, in the octave of the following dominant chord.

The 3rd, instead of ascending into the octave, remains in its place, and becomes a 5th.

The 5th likewise remains in its place and becomes the seventh; and the bass, instead of proceeding to its tonic (C), ascends a minor semitone, and forms the major 3rd;* thus we modulate to A minor instead of C.



N.B. All the inversions of the fundamental 7th may be here employed; the most effective, however, are the first and third.

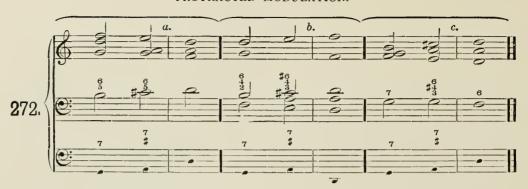
The effect which these deceptive modulations produce will be better understood by the following shore example of recitative:—



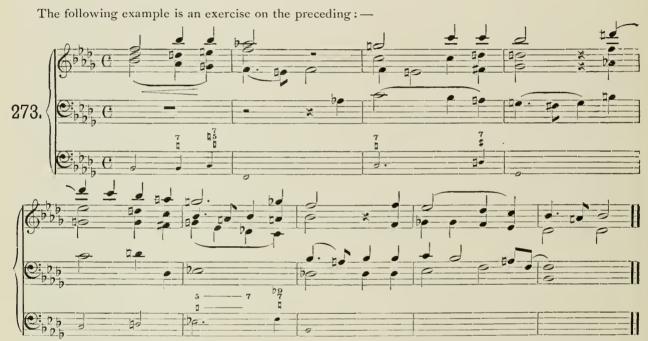
DECEPTIVE MODULATIONS-IN WHICH THE FUNDAMENTAL SEVENTH RESOLVES INTO THE FIFTH.

In the following example, the dominant (G), instead of proceeding to its tonic (C), ascends a whole tone, and becomes (as in the foregoing examples) the dominant of another key, which latter we prefer to be minor, as being the relative minor to the subdominant of the expected key of C.

^{*} This must, however, be understood as referring only to the *inverted* bass, because the fundamental bass falls on this occasion on a *minor* 3rd.



In this deceptive modulation the 7th descends on the 5th of the new dominant; the 3rd ascends into the 3rd in the inverted bass, and the octave remaining in its place, prepares the 7th in the chord of the new dominant. The different inversions of the above chords are exhibited at b and c.



Observe, that the subject of the two first bars in the *tenor*, is imitated in bars 3 and 4 by the *bass*; in bars 5 and 6 by the *alto*; in bars 6 and 7 again by the *tenor*; and in bars 8 and 9 by the *soprano*.

PROTRACTED MODULATION.

If the 3rd of the dominant chord, instead of ascending to the 8th, continue to fall a minor half tone on the 7th of the following dominant, it will produce alternately the $\frac{6}{4}$ and $\frac{6}{5}$, and form thus a continued chain of unresolved dominant chords, by which the expected tonic is omitted, and the final close of the modulation deferred, or protracted, as in the following example:—

	(8 30			ı. 3		p 8	
274.	6 5	6 4 2	be 5	6 4 2	þ6 55	be b2	etc.
(- to-	-	>	
	-		- - -		b=	b -•-	



At b, dissonances are introduced, by which the imitation which naturally arises out of these modulations is more apparent.

The following is a protracted modulation with the addition of the chord of the minor 9th.



At a, a modulation, such as has been exhibited in example 26% (b), is here introduced.

At b, appears the imperfect false cadence, as shown in example 269.

The following example shows another kind of protracted modulation, by which the inverted bass is enabled to descend by semitones through the whole octave:—





At 3, is the first inversion of the minor 9th, changed at 4 to the chord of the compound sharp six by the inverted bass being lowered a semitone.*

At 5, the resolution of the chord of the 6 has been omitted, but we proceed as if it had taken place thus:

At 6, the chord of the diminished 7th.

At 7, the chord of the compound sharp sixth.

At 8, the resolution of the 4 again omitted.

At 9, the first inversion of the minor 9th.

At 10, the 9th of the preceding chord changed to a 7th. See example 278.

MODULATION THROUGH THE ASCENDING AND DESCENDING CHROMATIC SCALE.

In the following example the fundamental 7th is changed to a minor 9th, by which the inverted bass continues to ascend by half tones:—



The above modulation bears a strong resemblance to example 270. Here, however, the 7th is not resolved into the octave, but changed into a 9th, which occurs again at II, and III; and in this manner we are enabled to modulate through the whole ascending chromatic scale.

In the preceding example the fundamental 7th was changed into a minor 9th; in the following example, on the contrary, the 9th is changed into a 7th, by which the inverted basses continue to descend by half tones:—



The following example will show how the several inversions of the minor 9th may be employed with effect:—



The first five bars contain only the chord of the minor 9th. The bass commences with the interval of the 9th, and passes from thence to the 7th, 5th, and 3rd successively; the rest of the parts interchange places, during which the alto proceeds from the 7th to the 9th; the tenor from the 5th to the 7th, and the soprano from the 3rd to the 5th. The same occurs frequently in the course of the example. From the commencement to the end of the fifth bar we are led to expect the arrival of the key of C minor; however, the 3rd (Bz) in that bar having been lowered a half tone to Bb, in the sixth bar, we modulate in the seventh bar to Eb.* From thence to the twelfth bar is continued the chord of the minor 9th of F, and thus a demonstration is made to modulate to Bb minor, but, by the introduction of the $\frac{\# 6}{5}$ in the 13th bar, $\frac{\# 6}{5}$ we modulate to G, and from thence to C minor.

MODIFIED, OR SECONDARY BASSES.

The only fundamental basses which have hitherto been employed in harmonizing melodies are the tonic, dominant, and subdominant. We have seen that from these *three* basses, with their harmonies, inversions, occasional introduction of modulation, dissonances, passing and auxiliary notes, we have been enabled to proceed thus far with sufficient variety. Let us now, however, make an attempt to discover other basses than these hitherto employed, and thus procure a still greater diversity of effect.

It has already been stated, that the natural scale consists of *three sounds only*; that our modern diatonic scale is compounded of two of these scales; that, were we to continue the succession of these scales of three sounds, we should continue to modulate *ad infinitum*; that, in order to avoid this, we are necessitated to break off at the sixth sound, and modulate back to the original key, by which consecutive fifths and octaves are produced.

Let us now, instead of *breaking off* at the *sixth* sound, continue the scale without paying any regard whatever to the semitones which should occur between each of the subsequent scales of three sounds. If we continue to repeat the figures 8, 5, 3, in succession, over the intervals of this scale, and write the fundamental basses as indicated by these figures, we shall find that (after the first two scales) the intervals which follow, instead of being accompanied by the tonic, dominant, and subdominant, will be accompanied by other basses; the chords of which (except those arising from the three original) are either minor or imperfect. ‡

If we divide the above continued scale into scales of three sounds, and place under each its generator, or tonic, it will produce a progression of harmony, whose basses continually ascend by fourths, or descend by fifths.



In accompanying the scale as above, it is evident that we have deviated (commencing with the third bar) from the path pointed out by nature, and consequently the harmony produced is often obscure and crude. Yet this very obscurity we shall endeavor to turn to advantage, and by introducing it judiciously among the harmonies of the three original basses, produce still more light and shade than heretofore. Having premised thus much, let us enter into an examination of each interval of the diatonic scale, and see how the chords, as exhibited in the above example, may be employed in our future exercises.

* See example 266. † See example 268.

An imperfect common chord has its 3rd and 5th minor, thus:

The imperfect common chord of B is B, D, F.

D — D, F, Ab.

The first sound of the scale, we know may be accompanied by two basses, viz., the tonic, which is an 8th below, and the subdominant which is a 5th below.* Now, if we take the note which is a minor 3rd below (as at a in the following example), we shall procure a new bass (which is neither one of the original three belonging to the scale, nor a dominant by which we can modulate), and which, for distinction, we shall call a modified or secondary bass.



In order to show the application of these basses, and enable the pupil to form a just idea of their effect, let him compare the accompaniments to the melody at b, c, d, in the example with those at e, f, g.

At \dot{b} , the *first of the scale* has been accompanied according to the third rule of employing fundamental basses. †

At c, according to the second rule of modulating in a melody.‡

At d, both are united.

At e, modified bass, with third rule of accompanying the scale.

At f, " with second rule of modulation in a melody.

At g, "followed by the chord of the sharp 6th.

At h, when the key is minor, the modified bass to the first of the scale has a major chord.

The *second of the scale*, as we know, has only one original fundamental bass, which is a fifth below, and thus admits of two modified, *viz.*, one an *octave*, and the other a *third* below (see *a* in the following example):—



It is necessary to remark, that the modified bass, which is an octave below, produces a better effect than the other, and should therefore have the preference; the reason is this,—the chord produced by the modified bass, a 3rd below, is an *imperfect common* chord having a minor 3rd and false 5th. The false 5th and

^{*} Third rule accompanying the scale, page 30.

[†] See page 30.

octave of this chord, when heard together, produce the same effect upon the ear as the two principal intervals of the fundamental 7th (to the first inversion of which the imperfect common chord in its effect bears a strong resemblance). But as the false 5th in ascending (d), and the octave in descending (e), have the same effect as if the fundamental 7th had ascended and the 3rd had descended, the ear feels a certain degree of dissatisfaction, particularly when this chord is employed fundamentally (c); when inverted (d), the defect is not so very perceptible, owing to the octave not being doubled.

THE THIRD OF THE SCALE, HAVING BUT ONE ORIGINAL FUNDAMENTAL BASS, MAY BE ACCOMPANIED BY TWO MODIFIED BASSES, VIZ., A FIFTH AND EIGHTH BELOW:

The first of these, being the chord of the relative minor to the original key, produces the best effect, as in the following example, at α :—



THE FOURTH OF THE SCALE MAY HAVE TWO MODIFIED BASSES, VIZ.,
A THIRD AND FIFTH BELOW (b).

The former is preferable, the latter being the imperfect common chord.

THE FIFTH OF THE SCALE HAS BUT ONE MODIFIED BASS, VIZ., A THIRD BELOW (a). An application of the preceding modified basses will be found at d.

THE SIXTH OF THE SCALE HAS TWO MODIFIED BASSES, VIZ., A FIFTH AND EIGHTH BELOW (as in the following example at a), both of which are good:—



THE SEVENTH OF THE SCALE HAS TWO MODIFIED BASSES, VIZ., A FIFTH AND EIGHTH BELOW.

The first is preferable, as the latter produces the imperfect common chord

It is necessary to remark, that the introduction of modified basses demands great care and circumspection, as in employing them more mistakes are likely to occur than on any other occasion; these, however, will be prevented by a little attention to the following observations:—

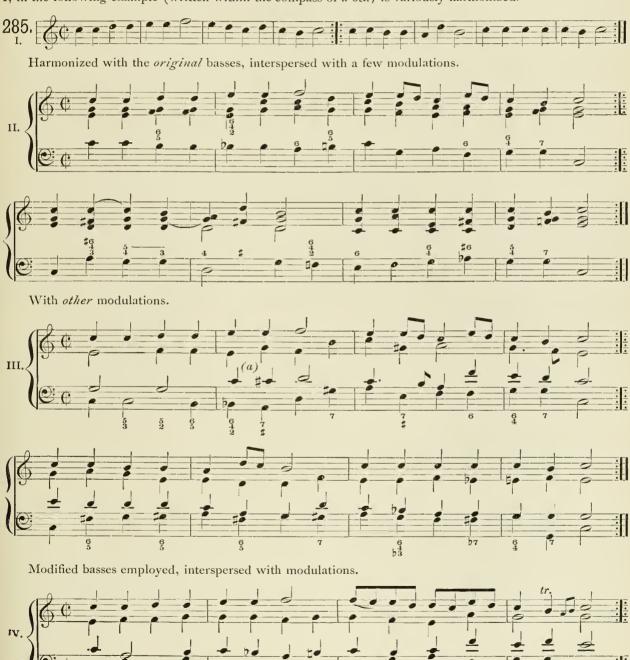
Ist: Employ the modified basses very sparingly; for as melody is derived from the harmony of the original fundamental basses, *they* should be more frequently employed than any other: they originate with nature, and, therefore, are the most satisfactory and pleasing. On the contrary, by introducing too many modified basses, the beauty of natural harmony accompanying a simple melody is frequently obscured, and crudities arise which we should endeavor to avoid.

· 2nd: Very seldom employ the imperfect common chord fundamentally; to the first inversion of that chord, however, no objections can be made.

3rd: Those modified basses which produce the relative minors of the *tonic* and *subdominant* should be employed in preference to any other, particularly when introduced as *fundamental basses*; they are on these occasions exceedingly effective.

4th: No modified basses should on any account be introduced until the melody has first been harmonized with the three original basses, employing the five rules, and rules of modulation, as occasion may require; after having *done so*, we should carefully examine where the modified basses may, with most propriety, be introduced.

In order to show the application of these basses, and give some idea of their effect, the simple melody at I, in the following example (written within the compass of a 6th) is variously harmonized.





At (a) III, is a deceptive modulation, the fundamental 7th resolving into the 8th.

At (a) V, the 3rd of the dominant chord is permitted to *descend*: this license is often indulged in by composers, to obtain a fuller harmony.

SEQUENCES OF SEVENTHS.

It must have been observed that hitherto we have treated only of such 7ths as required no preparation, viz., fundamental or dominant 7ths; we shall now introduce 7ths which require to be prepared.

In referring to example 280, we shall find that the generator or tonic, being placed under each scale of three sounds, produces a continued progression of basses, ascending 4ths (or descending 5ths); which uniformity of progression we shall call a sequence; and when such basses are accompanied by common chords (as in the above-mentioned example) we shall denominate them sequences of common chords. Now, as the above progression of the bass ascending a 4th (or descending a 5th) is the same as from a dominant to its tonic, 7ths may be added; and when they are added, we shall call the progression a sequence of sevenths.*

When these 7ths are added to *minor* or *imperfect* common chords, the effect produced will be extremely dissonant, unless the 7ths are prepared. In order that the pupil may clearly understand the nature of a sequence, let us write a progression of basses, descending a 5th, and ascending a 4th, or *vice* versa, as at a, and then add the simple melody as at b in the following example:—



* In this progression of sequences a most admirable symmetry is observable. It was the great source from which the ancient composers drew their subjects for fugue, and the ground upon which they chiefly constructed their church compositions.



If, instead of permitting the 3rds of the basses, in the preceding example, at a, b, to ascend, we let them remain in their places (as at c), they will produce a succession of 7ths prepared by the 3rds. At c, the 7th appears only alternately; but if we add another part, as at d, we shall have an uninterrupted chain of 7ths, as at e, where it will be perceived that, in consequence of the uniform progression of the bass, we are enabled to treat the 3rds of the new part which was added at d exactly in the same manner as those at c.

These sequences of 7ths seem to partake in a great measure of the character of *unresolved* retardations; see f, where the retardation of the 7th has been regularly resolved upwards.

If we write the preceding exercise in four parts, as in the following example at α , each chord will be accompanied alternately by a 5th or 8th: that is, the 8th remains in its place, and, by the progression of the bass, is changed into a 5th, similar to a progression of fundamental 7ths.



At b, this exercise appears in five parts, and the interchange of the 5th and 8th takes place between the second soprano and tenor alternately.

Observe that the preparation of the 7th may be effected by any interval of the common chord. At (c) the 7th is prepared by the 3rd, and at (d) by the 5th, and at (e) by the 8th.

Characteristic difference between the chord of the fundamental 7th, and that of the 7th in sequence.

The chord of the fundamental 7th is produced by nature.*

It stands between *consonances* and *dissonances*, as it requires *no* preparation, but must be resolved.

luced by nature.*

The chord of the 7th in sequence is produced by art

It is a dissonant chord, and must be prepared.

It prevents modulation.

By its means all modulations are effected.

In every other respect both chords are exactly alike.

The 7th by sequences has its inversions like the fundamental 7th:—



At a, first inversions. At b, second inversions. At c, third inversions.

In the above example, sequences of the 7ths and common chords succeed each other alternately, which produces a much better effect than an uninterrupted succession of 7ths.

INTERMIXTURE OF THE FUNDAMENTAL SEVENTHS WITH SEVENTHS IN SEQUENCE.

When the 7th in sequence is a half tone higher than the fundamental 7th, the chord will be a major chord (a):—



When the 7th in sequence is a whole tone below the octave (like the fundamental 7th), the chord will be either minor as at b, or imperfect as at c.

If, therefore, in the first case (at a) the 7th be lowered a half tone, as at d, or the chord changed from minor to major, as at e, or from imperfect to perfect, as at f, the chord of the fundamental 7th will be produced.

If, during the progression of sequences of 7ths, we change any one of the chords to a dominant chord, a modulation will immediately be effected to the *succeeding tonic*, upon which a close, though not a final one, may take place; or, if we choose, we may, upon this *last tonic*, commence a progression of sequences, and continue as before.

Observe that in a progression of sequences, no sharp or flat can be introduced which does not belong to the key in which the progession takes place; for a modulation to another key would be the immediate consequence, as will be seen by the following example:—



The sequences continue through the 3rd chord; the fourth chord having been made major, modulates to the key of A minor at the 5th chord, after which we close with a cadence.

These progressions of sequences may be intermixed effectively with a progression of dominants, thus:



In the preceding example, the same progression of the fundamental bass is continued throughout; but, after the first three, instead of sequences, we have employed dominant chords, by which a protracted modulation is effected at 4, 5, 6.

The following example will show how admirably these sequences, when intermixed with dominant chords, are adapted for imitation and variety of effect:—



In the preceding example, at 1, 2, the soprano commences a short subject, selected from the two first chords of these sequences; and, in order to give this subject more character, two notes of secondary harmony have been introduced.

At 2, the alto commences the imitation, which is continued to 6; here the tenor takes up the subject, with a slight variation, and pursues it as far as 10, where it is resumed by the alto, and subsequently imitated by all the parts alternately.

The bass, at 1, 2, also commences a short subject, founded on the two first fundamental basses, with their first inversions. This subject is answered at 11 by the tenor, and at 14 again, slightly, by the bass; which part, at 15, takes up and continues the subject of the soprano to 19.

The sequences continue as far as 7, consequently we remain in the original key.

At 8, commences a *protracted* modulation,* which ends in the key of Ep; for at 11, t modulation is arrested in its progress by the introduction of sequences, which continue to 14.

From 15, a mixture of protracted and deceptive modulations † leads us back to the original key.

In order to ascertain whether a bass melody, about to be harmonized, will admit of sequences, it is only necessary to examine whether it contains any of the following progressions:—



At a, is the progression of the fundamental bass itself.

At b, the progression of its 3rd.

At c, the progression of the 7th; and as that interval must always be prepared, it is easily distinguished from any other by two notes of the same denomination being tied together. The first of these notes is the preparation of the 7th, the second is the 7th itself, and the note which follows is its resolution.

Although the progression of the 5th is similar to that of the 7th, (see d); yet the effect is not so good, and therefore it ought to be sparingly employed.

Let us suppose that we were required to harmonize the following bass melody: —



It is evident, from the progression of the intervals of the above theme, that the greater part of them may be considered in three points of view;—

First, they may be treated as a progression of sequences, as follows:—



Secondly, as a progression of dominant 7ths, and thus modulate: -



Thirdly, as partaking of both: —



In the following example, at α , the bass melody of example 294 will be found harmonized throughout with sequences, except where the progression of its intervals rendered it impracticable: —



The following is the same melody and harmony as the foregoing, with the addition of passing and auxiliary notes and secondary harmonies, by which the imitation between the several parts naturally arising out of a progression of sequences, will be more clearly perceived:—

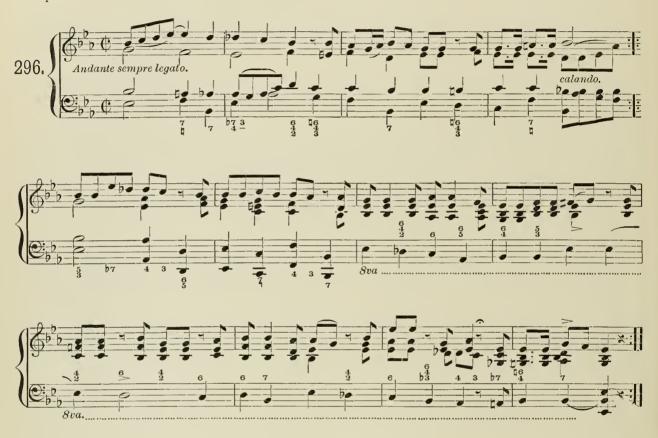


N.B. The 5ths, at c, between the soprano and tenor by contrary motion, are allowable. *

^{*} See example 302 (f).

Those basses, which in the preceding example were treated as *sequences*, are in the following example treated sometimes as *dominants*: the rules of "modulation by the intervals of a melody "have likewise been employed; and thus an effect is produced, so very different from that in the preceding example, that one would scarcely imagine both to have emanated from the *same* bass melody.

The student will find much improvement in a careful examination and comparison of these two examples.



N.B. In the second bar a deceptive modulation takes place. †

Lastly, the melody in example 295, which has been extracted from the bass melody of example 294, is, in the following example, re-harmonized with other basses, according to the five rules of employing fundamental basses, and "modulation by the intervals of a melody."



* Page 115 to 128. † See example 273.

(a) See licensed resolution of dissonances, Ex. 257. (b) See Ex. 255.



By comparing the bass and harmonies in this example with those of the two preceding, we shall perceive what a variety may thus be created; and those who are inclined to study composition, will, even in these few examples, find ample matter. The preceding specimens will sufficiently show how 7ths in sequence may be employed with effect; their introduction not only prevents frequent modulation (thus impressing the present key more strongly on the mind), but also adds strength and vigor to the texture of the harmony. They contribute, moreover, materially to cement and interweave the several sections of which periods are constructed,* thus forming a still more connected chain throughout the whole composition.

SEQUENCES OF SIXTHS, 6 5, AND 7 6.

From the progression of fundamental sequences of common chords, at a, arise those at b and c.



In employing the progressions of the preceding example, it may perhaps be better to let the 6th appear on the accented part of the bar (as at δ), because the 5th in that situation produces in some measure the effect of consecutive 5ths: this observation, however, has only reference to what is called the strict style of writing.*

By omitting the common chord in the progression at c, a sequence of the chord of the 6th will be produced (as at d), the effect of which, when judiciously employed, is very good.

From the descending progression of 6th at e, is derived that at f, which indeed is nothing else than the dissonance of the 9th resolving into the 8th; in this case, however, the interval of the 9th (which is the 7th to the present bass) must appear in the soprano: were we to give it to the alto, as at g, consecutive 5ths would be produced; for the intervening dissonance does not obviate the improper digression. This is shown at gg, where the dissonance is omitted; should we, however, consider the proper fundamental bass to this progression to be, as written at h, then the 7 6 arises from a sequence of 7ths, and these two intervals may appear in the alto.

It may be observed, that a sequence of 6ths is better calculated for a harmony of three parts than four; because in avoiding the consecutive 5th at l, the tenor is obliged (as at i, k) to proceed by great intervals, which disturbs that smooth and graceful progression for which sequences of 6ths are distinguished.

How admirably Haydn has treated a progression of sequences of this description will be seen from the following specimen, extracted from one of his quartets:—



The following example, which is written for the pianoforte, exhibits all the preceding sequences in their various forms, ascending and descending. They are written chiefly in three parts; and still more clearly to show their effect when written thus, a contrast is produced by writing the harmony on every other occasion as full as possible.





THREE MOTIONS IN HARMONY.

When two or more parts proceed together in ascending or descending, they are said to proceed by similar motion (as at a):—



* See example 279.



When one part ascends or descends, while another remains in its place, an *oblique* motion will be produced (b). When one part ascends while another descends, they proceed by *contrary* motion (c). These different motions or progressions may be more or less combined; for example: two parts may proceed by *similar* or *contrary* motion, and a third part remain in its place. At d the soprano and alto proceed by similar motion, and by the bass remaining in its place, they produce collectively the *similar* and *oblique*. At e, the soprano and bass proceed by *contrary* motion; but, the alto remaining in its place, they produce collectively the *contrary* and *oblique*. At f, the soprano and alto descend by *similar* motion, while in like manner the bass and tenor ascend, producing collectively the *similar* and *contrary*; and at g the *oblique* has been added. At h, all these various motions have been exemplified by the progression of the chord of the fundamental 7th to its tonic.

CONSECUTIVE FIFTHS AND EIGHTHS.

It has already been shown how these forbidden progressions in some measure may be avoided *; we shall now dilate somewhat more on this subject, and introduce specimens from the works of the most classical authors, to show how they have proceeded on these occasions. One *general* rule, however, by which these troublesome progressions may be got rid of, is, to employ contrary or oblique motion. In the following example:—

At a, consecutive 5ths and 8ths.

At b, prevented by contrary motion.

At c, consecutive 5ths and 8ths.

At d, the 8ths are prevented by contrary, and the 5ths by oblique motion.



5ths and 8ths may follow each other in the same parts, provided they proceed by contrary motion.



At e, are 8ths between the treble and bass.

At f, 5ths between tenor and bass.

At g, as here written, there appear consecutive 5ths between the tenor and bass, but the composer makes the second violin and tenor cross each other, and thus the 5ths are prevented †.

* Page 18.

† Page 26.

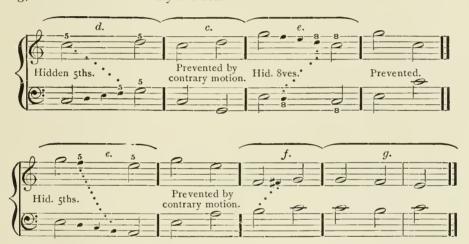
HIDDEN FIFTHS AND EIGHTHS.

When two parts, proceeding together by similar motion, terminate their progression by 8ths, they are said to produce *hidden* consecutive 8ths (as at a); for if the space between these two intervals be filled up (as at b), consecutive 8ths will be evident; but, as these notes are not introduced, such consecutive 8ths are therefore purely *imaginary*: they may easily be prevented by contrary motion (as at c).



The same observation may be applied to hidden 5ths (d).

Such hidden 5ths or 8ths as are here produced by both parts proceeding by skips (as at e), are worse than the preceding, and should be cautiously avoided.



The *minor* or false 5th should, strictly speaking, not be allowed to *precede* the major 5th, because a hidden perfect 5th is found between them $(f)^*$; but the *major* 5th *may precede* the minor 5th (g). Hidden 5ths and 8ths are generally allowable, and it will be found that the works of the best and most classical authors abound in them; between the *extreme* parts, however, it is at all times advisable to avoid them. Yet even *here*, we find Haydn and others have had no scruple in using them (see a):—



The consecutive 5ths which are produced by the progression of the chord of the $^{\sharp 6}_{5}$ at α , are at b prevented by *suspensions*. Cherubini, however, in one of his later church compositions, has permitted those consecutive 5ths, as exhibited at (c), to appear more than once \dagger .

^{*} This rule is not so much attended to by modern composers.

[†] See page 132.

Consecutive 5ths (when produced by passing notes) are permitted, because passing notes do not form an essential part of the harmony *.



Improper progressions cannot be prevented by diversifying, or (as it is usually called) breaking the chord; for whether the intervals of the chord are varied (as at a), or struck together (as at b), their effect, with reference to their improper progression, will remain the same.



Nor can consecutive 5ths or 8ths be prevented by the introduction of rests (c).

As a progression of 3rds is allowed, why may not a progression of 5ths or 8ths be allowed also? Nature herself appears to reject them!

We find that the harmony arising from the vibration of a string produces consecutive 3rds, but neither consecutive 5ths or 8ths †. Nature has here been most decided: she points out to us a uniform uninterrupted chain of harmony, so closely interwoven that not the least break is discoverable. *Hidden*, or in other words, imaginary 5ths and 8ths do present themselves, but no real consecutives. Neither shall we find that two intervals of the same name, except 3rds, follow each other directly; and even those are of different species; for, the first of them (which is produced on the second of the scale) is major.

The continual interchange of intervals which takes place in the harmony of the scale, arising from nature, points out to us the origin of that beautiful variety and regularity, so indispensable in a musical composition. In one word, it is the fountain from which flows the first stream of pure harmony, and the stream ought to be kept as pure in its course as the source from which it springs.

The necessity, therefore, for the rule, that "consecutive 5ths and 8ths are to be avoided," is self-evident, and we may rest assured that, when these improper progressions have been permitted to take place, it has been at the sacrifice of a better melody and harmony.

^{*} See Sulzer's Allgemeine Theorie der Schönen Künste, page 758.

INTRODUCTION TO THE CONSTRUCTION OF MELODIES.

ON THE DIFFERENT MEASURES OF TIME, RHYTHM, ETC., ETC.

Hitherto the pupil has harmonized only such melodies as were written for him; it shall now be shown how he himself may construct melodies.

The first step toward the accomplishment of this object will be to make him acquainted with the formation of a bar, and the various descriptions of time in which a composition may be written.

In order to clearly understand what is meant by different measures of time, let us suppose the notes in the following example performed with an equal degree of strength throughout; in this case they will convey no particular meaning or expression, except what is produced by their rising and falling; they are (if we may be allowed to use a metaphor) inanimate; and though harmony, modulations, dissonances, etc., might contribute much towards calling them into life, yet one powerful ingredient would still be wanting, viz., a proportion or form.



In order to obtain this *rhythmical* form, let us divide the above series of notes into portions of two notes each, as in the following example:—



These divisions we shall call bars, which are distinctly separated by lines drawn across the staff. This process gives us eight bars. Were we, during the performance, to count them—one, two, three, etc., to eight, we should unconsciously lay a stress upon the *first* note of each bar, but not on the second; this we shall call ACCENT; and it is the commencement of rhythm.

From the *first* division of two notes in each bar is deduced the rule that, "when a bar contains two portions of equal value (whether they be semibreves minims, or crotchets), the *first* half is accented, and the *second* half *unaccented*.

This measure of time we shall, for the present, mark by the figure 2 at the beginning of the staff, thus: $\frac{2}{1}$ for two semibreves in a bar; $\frac{2}{2}$ for two minims; and $\frac{2}{4}$ for two crotchets*, and as each bar consists of two notes of equal value (or their equivalent) we shall call it equal or common time †.



- * The upper figure expresses the number, and the lower figure the value (as to time) of each note in a bar.
- † In modern compositions, this measure of time is generally marked thus \bigoplus : it would, however, be advisable to adopt the above simple mode, as it is better calculated to show the real difference between the $\frac{4}{5}$ here mentioned, and the $\frac{2}{5}$ hereafter shown.

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Two bars of the above may be united to form one bar; which will produce a measure of time of four; thus: $\frac{4}{1}$, $\frac{4}{2}$, $\frac{4}{4}$, $\frac{4}{8}$.



As each bar of the *latter* arises from a union of two of the *former*, it follows that each bar of the latter must necessarily have also *two accents*, viz., on the *first* and *third* portions; with this difference, however, that the *second* accent (marked here with a small a) is not so strongly accentuated as the *first*.

The time arising from four notes of equal value is called common time.

N.B. Let this distinction between the measure of $\frac{2}{2}$ and $\frac{4}{4}$ be carefully kept in mind.

If that equal measure or division of time which was first described be destroyed by doubling the value of the first portion (as at a in the following example), or by reducing that of the second portion to one half of the value (as at b), a new measure of time will arise, consisting of three notes of equal value (as to time) in each bar; this is called triple, or unequal time, and is marked thus: $\frac{3}{2}$, $\frac{3}{4}$, $\frac{3}{8}$.



As the above triple time arises out of the measure of $\frac{2}{2}$, as described at example 308, it should consequently have but *one* accent, viz., on the first portion of each bar.

It is, however, necessary to observe that another kind of triple time is in use, arising out of an original grouping of *three notes* of equal value, between which notes the accent is sometimes equally divided.



RHYTHM. 211

The characteristic difference between these two species of triple time is sufficiently strong not to be easily mistaken; for instance, it will be clearly seen that the triple time at (c), in the following example, is derived from the measure 2 at (b); while that at (d) is derived from an original grouping of three notes of equal value. The accent of the former measure of time admits of no doubt, while that of the latter is equivocal.





If in a bar of 2, one half its value be added after each note, a new measure of time will again be produced, called compound common time, marked thus: 6, 8.



As this division of time arises out of the measure of 2, it ought consequently to have but *one* accent, and we shall call it short compound common time.

When two bars of triple time, arising out or the measure of 2, are united, *long* compound common time will be produced.



As this time arises out of the measure of 4, each bar must of course have but *two* accentuations, as in example 309. This *long* compound common time, arising out of 4, is sometimes mistaken for that arising

from 2. The difference, however, will be immediately perceived on comparing the *short* compound common time at (b) with the long at (c)* in the following example:—



By adding the bars of short $\frac{6}{4}$ together, we produce $\frac{12}{8}$; and as this measure of time arises from $\frac{4}{4}$, it follows that two accents must take place in each bar.



By adding one half of its value to each note of 3 in a bar, compound triple time, \(\frac{9}{8} \), is produced.



Whether the accent is to fall on the *first* part of the bar, or to be equally divided, will of course depend on the *original* measure of time from which this compound time is derived.

The following example (318) will exhibit in a still stronger point of view, the variety of effects which may be produced by merely altering the *rhythmical* form of a simple melody. In this it will be perceived that, without deviating from the *original* progression of the notes, all the subsequent variety of effects has

been produced by either changing the measure of time, by shortening or lengthening the value of some of the notes, by employing dots, rests, etc., etc. As one example often tends more to elucidate a subject than pages of explanation, the following may serve as a slight specimen of the importance of rhythm; and to show how much it influences the effect of a musical composition, a description has been attempted of the various feelings and passions supposed to be portrayed by the different alterations of the rhythmical form of the melody. Rhythm, indeed, may be considered as the soul of music and demands our utmost attention.





ON THE CONSTRUCTION OF PERIODS, OR MUSICAL PHRASES.

In the preceding examples it has been shown that, by dividing a succession of notes into certain portions, bars are produced. Proceeding thus with a succession of bars, we shall produce *musical periods* or *phrases*. A union of several of these periods forms a composition. As the most natural measure of time arises out of an even number of bars, viz., $\frac{2}{2}$, $\frac{4}{4}$ *; those periods which consist of 2, 4, 8, 10, or any even number of bars, are the most natural and pleasing; we shall therefore call them *regular periods*. The conclusion of a period, in music, is similar in effect to a full stop in language; every period should therefore end with a cadence.

The following example is a period consisting of four bars, including the final cadence:—



As at the close of this period the ear is brought to a state of perfect rest by the final cadence, we shall call it a "perfect period."

It is not absolutely necessary that all periods should end in the same key in which they commenced



Here the period commences in the key Bb, and ends in its relative minor: it will, however, be understood, as a matter of course, that the melody cannot end thus; something must follow, in order to return to the original key.

^{*} See example 308.

After having commenced a period of eight bars, we perceive, on approaching the fourth bar, that we are imperceptibly attracted towards the harmony of the dominant, and a desire is experienced, at that point, to come to a certain degree of repose. If, therefore, in the fourth bar of a period of eight bars we come to the harmony of the dominant *, whether by progression or modulation, we shall call it a half period; to proceed by modulation, however, is preferable. The period in the following example consists of eight bars, divided by the half period effected by the modulation at (a):—



Had the harmony of the third and fourth bars of the above example been written as at (b,) the half period would have been formed by progression.

Where the melody is written in long common, or long compound time, the period will generally be found to consist of four bars only: in that case the half period will of course fall on the second bar.



A period, or half period, may also be divided into smaller portions called "sections," which may either proceed by progression or modulation. When a section of modulation is introduced on the accented part of a bar, we shall call it an accented section of modulation; and when introduced upon an unaccented part of the bar, an unaccented section of modulation; the effect of the latter, when contrasted with that of the former, will be found much more soft and insinuating.

These matters will probably be more clearly comprehended by examining the following melody with attention.

*Although the harmony of the dominant is here the most natural, yet, for the sake of variety, a modulation to the relative minor, or dominant, subdominant, etc., ought not to be objected to, as will be shown presently.

First: It comprises sixteen bars, divided into two parts of eight bars each. Each of these parts consists of a whole period. The first is divided by a half period, effected at (a) by a modulation to the dominant. At (b) are accented sections of modulation, and at (c) they are unaccented.



Had the same melody been written and harmonized as in the following example, the sections, together with the half period, would have been by *progression* instead of *modulation*.



The notes constituting the final cadence may of themselves be treated as a period, as in the following example; but, as the effect produced by such short periods (particularly when written in immediate succession, and without modulation) is exceedingly monotonous and puerile, they should be avoided.



By the introduction of modulation, however, even such short periods may be made pleasing and interesting.



By a careful examination of the above, we shall find, first: that the monotony produced by the second period in example 325 is here avoided by a modulation to E minor. Secondly: that the last four bars which in example 325 appear as two periods, are here united into one, by the introduction of the modulation to B minor in the sixth bar.

It will be perceived that the modulations by which a union is effected between the several periods in the preceding example take place upon the unaccented parts of the bar; if, however, the rhythm of these bars be altered, a new and more striking effect will be given to the whole subject, thus:—



That the rhythm here is neither so natural nor so flowing as in example 325, is evident; nevertheless, when introduced with judgment, it will produce an excellent effect.

N.B. It is not necessary that the cadence which closes a period should always be so complete as those in the preceding examples; a mere *progression* of the chord of the fundamental 7th to its tonic will often be found quite sufficient to satisfy the ear, and conduct it to a certain degree of rest.

The national air of "God save the King" contains two periods; the first of which has six, and the last eight bars. They are divided into sections of two bars each.



The following example contains a period of six bars, divided into sections of three bars each: —



It has been stated that those periods which consist of an *equal* number of bars are the most natural and pleasing; some authors, however, in order to produce peculiar effects, do not scruple to depart from this general principle.

The period in the following example consists of nine bars; the first four bars of which form the half period, and the second portion contains five bars:—



This odd number of bars, when first heard, produces a very singular effect: the seventh bar in this period appearing to be uncalled for, and as if it were interpolated. It is, however, only necessary to play this charming melody a few times over, to convince us that the *added* bar is, in fact, a very great beauty.

The following example shows how very effectively Mozart has introduced periods consisting of three and five bars:—



The first five bars constitute a half period. The period which follows contains four bars divided into sections, and the last period consists only of three bars. Had the preceding specimen been written as in the following example, we should have had each portion equally divided; that is, the first half period would have contained four bars instead of five, and the last period four bars instead of three; but then, that spirited and energetic effect which the unequal division of the bars at (a and b) is calculated to produce would have been totally sacrificed. (See c and d.)



N.B. Those periods which consist of an unequal number of bars, we shall call "irregular periods."

It is not necessary that a period should always commence with the accented part of the bar; on the contrary, it may commence with a part, or the whole, of the unaccented measure; in which case the value of the notes at the end of the period, when united with those at the beginning, must constitute a whole bar.

The periods in the following example commence at a and b with a whole; at c with three-eighths, and at d with one-half of the unaccented part of the bar:—



We often find that two periods in immediate succession are constructed so that the *last* bar of the one immediately preceding is also the *first* bar of the one succeeding.

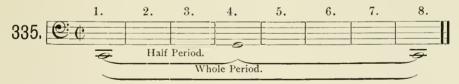


Although the interweaving of periods in this manner is sometimes very effective, it can only be considered as a license, and ought not to be indulged in too frequently.

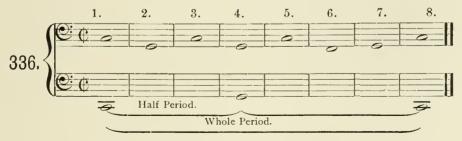
When the expected final close of a period is interrupted by either an imperfect, or any of the false cadences, we shall call it "an irregular period."

HOW TO CONSTRUCT MELODIES.

The pupil may now construct melodies himself by proceeding thus: — Having determined on the key and the time in which he intends to write (the former of which we shall suppose to be the key of C major, and the latter, short common time, $\frac{2}{2}$), let him divide the staff into eight bars; on the *first* and *last* of which let him place the tonic, and on the *fourth* bar the dominant. This simple arrangement may be considered as the first sketch or outline of a whole period, divided in the middle by the half period.



The unoccupied bars may now be filled up with different fundamental basses, as in the following example:—

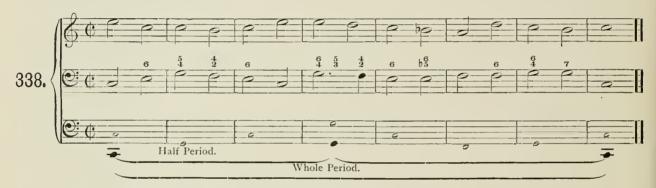


* Ending of the first period and commencement of the second.

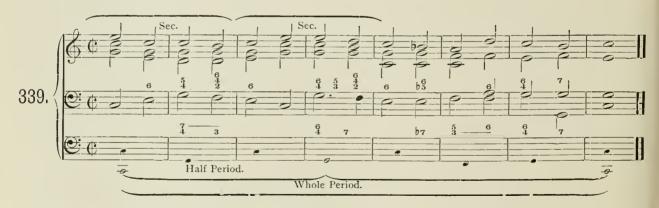
The pupil is here supposed to have chosen the dominant for the second bar, and the tonic for the third, thus arriving at the half period by *progression*; from hence he sets out again with the tonic, succeeded by the subdominant and dominant. Having now selected his fundamental basses, let him extract from these his inverted basses, which will produce a melody in the bass*.



From these inverted basses, or bass melody, must be extracted a counter melody for the soprano, or treble †.



To which let him now write the alto and tenor, and he will have a simple melody harmonized in four parts, to which may be added, if necessary, dissonances and passing notes, according to the instructions already given from page 51 to 150.

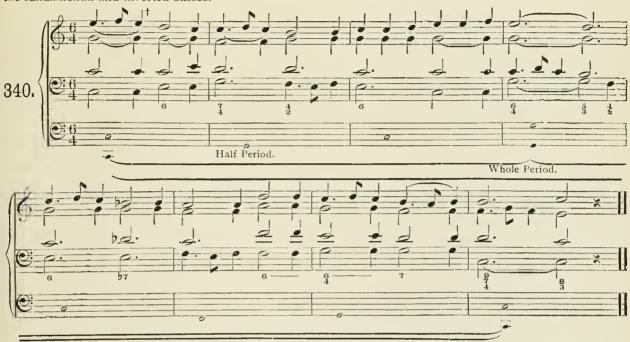


Although the above specimen is, for the sake of simplicity, constructed in common time, $\frac{2}{2}$, yet, that it may be changed with very good effect into any other measure is evident, according to the principles laid down from example 306 to 317.

^{*} The pupil will be greatly assisted in selecting his inverted basses by again perusing what has been said upon that subject commencing at page 68.

† See Ex. 219.

In the following example, the same melody has been altered into short compound common time, $\frac{6}{4}*$. No change in the harmony has taken place (except that of its being extended), as will be seen by examining the fundamental and inverted basses.



In the following example the *original* melody (at example 339) is harmonized in the minor mode. Dissonances are added, with passing and auxiliary notes, and the harmony is extended. At (a) the second inversion has been chosen instead of the fundamental bass.



^{*} See Ex. 312.

[†] Accented passing wote, see Ex. 238.

The same melody as in the preceding example is written for the pianoforte, in the style of variations.



In the second bar of the following example a slight alteration has been made in the *inverted bass*, by which the *soprano* is affected. The passing and auxiliary notes are here introduced chiefly in the bass. The pupil is recommended to compare the simple inverted bass (at a) with the florid one (at b), either of which may be used.





The following example exhibits the former melody, written in long common time *: -



The melody of example 341, is, in the following example, divided and dispersed between all the parts, showing how imitation may thus be effected, without any alteration whatever in the original fundamental harmony.

From 1 to 4, the melody appears in the 2nd violin; at 5 and 6, in the tenor; at 7, in the 2nd violin; and at 8, 9, and 10, in the 1st violin. The two first bars of the melody (as they appear in the 2nd violin), are imitated by the bass in bars 3 and 4.

^{*} See Ex. 309.

[†] The above example, it will be perceived, is arranged for two violins, tenor, and violoncello; the student, will, however, observe that this arrangement does not in the least affect the harmony, which may be performed by two sopranos, tenor, and bass.

COMPOSITION.

The student is requested to examine this specimen with care and attention, as he will find it not only improving, but very interesting.



It is presumed that the pupil, by this time, will have formed an idea of how a period may be constructed, and when once constructed, how variety may subsequently be produced, by either altering the inverted basses, employing different passing and auxiliary notes, dissonances, etc., and lastly, by changing the rhythm, or measure of time, in which the melody was originally written.

Let him recollect, that all the different effects which have been produced during the last nine examples, have arisen solely out of the sketch or outline in example 336, and that no fundamental basses, or inversions, have been employed during that time, but those found in example 338*; and when he also reflects that many other bass melodies may yet be extracted from the same fundamental basses, and that these melodies again will produce correspondent melodies in the soprano and inner parts,—he will easily perceive that, in the preceding examples (however simple the original materials), the subject is very far from being exhausted, and that much, much more may yet be done with it! This fact ought to stimulate the pupil to exert his own ingenuity in discovering other bass melodies from the same fundamental basses; and should he in the beginning find some trifling difficulty in succeeding according to his wishes, a very little practice will convince him that this difficulty exists more in imagination than in reality.

If, then, so much variety can be produced from the simple materials exhibited in example 336, what may not be produced when the first outline (example 335), is filled up with different progressions of fundamental basses.

The following example exhibits at one view a variety of specimens of filling up the original outline with different fundamental basses and inversions.

At II, we arrive at a half period of modulation, from which we proceed by a modulation to C, and from thence to D minor.

N.B. A and D, in bars 1 and 2 are modified basses.

VII, needs no explanation.

At III, a half period by modulation; preceded in the second bar by a modulation to the relative minor.

At IV, a half period by modulation; preceded by a false cadence at bar 3.

At V, a half period by progression; after which a modulation to the relative minor takes place.

At VI, a half period by modulation; this modulation has previously been effected at bar 2.

346.

VII.

VIII.

VIIII.

VIII.

VIII.

VIII.

VIIII.

VIII.

VIII.

VIII.

VIII.

VIII.

VIII.

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VIIIII.

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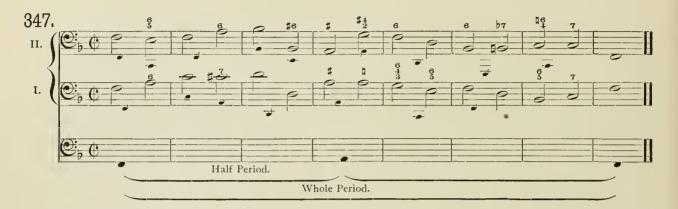
V

The pupil may take any of the above bass melodies, and proceed as already shown in the preceding example.

* Except in one single instance, where the second inversion is chosen instead of the fundamental bass, and which is scarcely worth noticing.

226 COMPOSITION.

In the following example (347) the *dominant* of the relative minor has been selected to conclude the *half period*. At I, we arrive there by *progression*; a modulation to the tonic of the relative minor having previously taken place in the second bar. At II, we arrive at the half period by modulation.



Here follows an example where the half period ends with the relative minor of the subdominant.

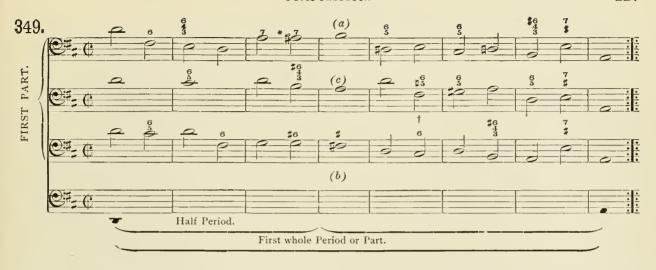


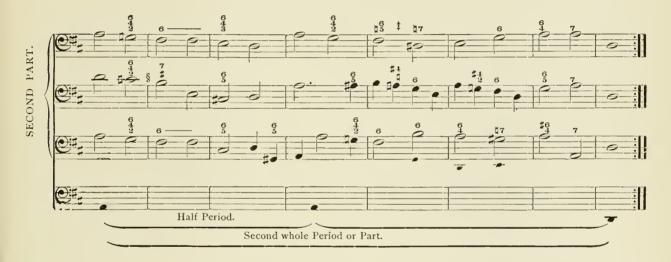
In the following sketch the half period ends with the relative minor:



Heretofore, our sketches have consisted of one period or part only; the following example exhibits such as consist of two parts.

In sketching the outlines of the first period, it will be perceived that nothing decisive has been settled with respect to the key in which the half period is to end; that arrangement shall hereafter be left to the judgment and taste of the pupil himself; for the present, we shall only point out how he may proceed on such occasions.



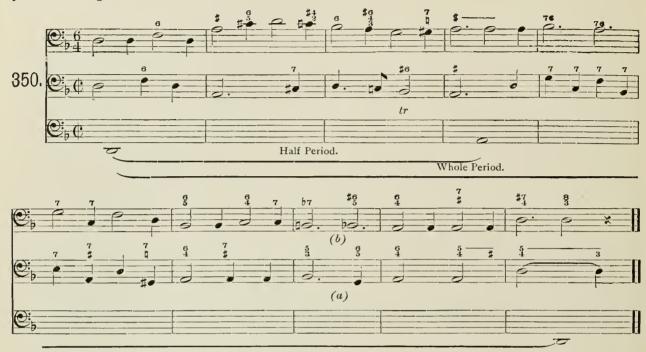


- At (a) we have modulated to the relative minor.
- At (b) to the dominant of the relative minor.

In the second part, the half period is made to fall upon the dominant of the original key; this arrangement became absolutely necessary in consequence of the several modulations which were introduced after the first half period, and by which the ear was imperceptibly led away from the original key. The dominant, however, in the 12th bar, is calculated to recall to our recollection the original key; and thus our ear is gradually prepared for its re-introduction.

^{*} Ex. 277. † Deceptive modulation, Ex. 272. § Deceptive modulation, Ex. 270.

Hitherto our periods have consisted of eight bars only; but by the introduction of the false cadence at (a), and the irregular false cadence at (b), the final close on the eighth bar has been avoided, by which these periods are lengthened to ten bars.



The following questions very naturally present themselves at this time, viz.: suppose I commence in a certain key, in what key shall I conclude my first period, and commence my second, etc.? In answer to these questions, we shall proceed to give the following suggestions as general rules. Let us suppose that the melody is to consist of sixteen bars, divided into two parts of eight bars each:—

If the key is C major, we can end the first part -

First, in the tonic, C. Second, in the dominant, G. Third, in the relative minor, A. Fourth, in the dominant of the relative minor, E.

Should the key be minor (suppose C minor), we can end the first part —

First, in the tonic, C. Second, in the dominant, G. Third, in G minor (the 5th of the original key). Fourth, in the relative major of the original key E ?.

FIRST CASE.

Suppose the key is major, and the first part ends in the tonic?	24.1	With the dominant by modulation G. subdominant by modulation F.
	3rd. 4th.	

The first part having been thus disposed of, the second part may commence with

				The half period may end	
The dominant, G, at once, or with a modulation to it.	 •	.{	1st. 2nd. 3rd.	With the relative	A. E major G.

AGAIN:

In that case the half period may end

Then the held needed many and

The second part may commence with the dominant of the relative minor (E major).

A. tive minor (E major).

A. Dominant of the original key . . G.

AGAIN:

The second part may commence with the dominant of the relative minor of the subdominant, A major.

Here let the pupil choose the key of the half period himself.

SECOND CASE.

When the first part ends in the dominant, G.

The half period may end

1st. In the dominant, proceeding there by progression.

2nd. In the relative minor.

The first part having been thus disposed of, the second may commence

1st. With the dominant, G.

2nd. With a modulation to the relative minor.

Here let the pupil again choose the key of the half period himself.

THIRD CASE.

When the first part ends with the relative minor.

The half period may end

1st. With the dominant, G; proceeding there either by progression or modulation.

2nd. With the subdominant, F.

3rd. With the dominant, G.

The second part may commence

1st. With the relative minor, A.

2nd. With the modulation to the subdominant.

3rd. With the dominant of the relative minor, E major.

4th. Modulation to the relative minor.

The half period may end as the judgment of the pupil directs.

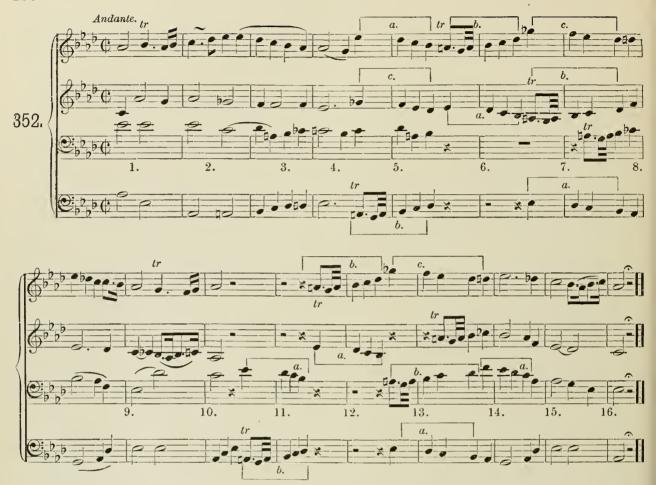
A melody which originally consists of only eight bars may be extended to 10, 12, 16, or a greater number, by repeating some sections of 2, 4, 6, or any other even number of bars.

The following example is a melody consisting of eight bars. At b it is extended to ter, by twice repeating the last crotchet of the fourth bar with the three crotchets immediately following. At c, the same melody is extended to sixteen bars, by repeating the last six bars found at b.



All these additional bars, however, are not intended to be introduced in the soprano only; some of them are also to appear alternately in the *alto*, *tenor*, or *bass*; and as these parts will, in consequence, be obliged to interchange places, a series of imitations will be produced.

In order to show the practical utility of this extension, and how these reiterated sections (which in the last example occasioned rather a monotonous effect) are here employed to produce imitations, let us narmonize the preceding melody in four parts.



The letters a, b, c, have been added to the soprano, alto, and bass, in order that the interchanging of the parts in the above example, by which the imitations are effected, may be more easily perceived.

At 5, the section for imitation (marked a) appears in the *soprano* as originally written. At 6, it is imitated by the *alto* an octave lower; and at 7, by the *bass*. While the *alto* and *bass* thus successively imitate the *soprano*, the latter at the same time, at 6, imitates the *bass* (b), and then the alto (c).

At 7, the tenor also partly imitates the bass (b). From 10 to 16, the parts continue to imitate each other with still more variety; for the sections in the soprano and bass, at 5, appear at 11 in the tenor and bass, and are imitated at 12 by the soprano and alto. And while at 13 the sections a, b, appear once more in the bass and tenor (but inverted)*, the soprano at the same time again imitates the alto (c) an octave higher. Observe also that the melody in the tenor, from 7 to 10 inclusive, has, at 13, been transferred to the alto.

It will be observed that hitherto the imitation has always commenced upon the same measure of the bar as the subject itself; in the following example, however, the case is different; for although the subjects for imitation (which here appear in the soprano and alto) do commence on the second crotchet of the unaccented part of the bar, as in the preceding example, yet they are not answered by the tenor and bass on the same measure, as heretofore, but on the second crotchet of the accented part of the bar. Thus a mixed rhythm is introduced, by which a new and still more striking effect is produced.

^{*} By which the two original parts in bar 5 proceed by what is called "double counterpoint" in the octave. See Ex. 95.



The parts which appear in the soprano and alto, at I, are here transferred to the tenor and bass, by which a mutual interchange of all the parts is effected.



The alto and tenor, at II, have here interchanged places; the former being written an octave *lower*, and the latter an octave *higher*. The soprano and bass remain unchanged.



There is not perhaps a more fertile subject, and one which might be more dilated upon than that upon which we have just been treating. If, however, the student possesses a little perseverance and industry, it will be found that enough has been said to enable him to pursue his object with pleasure and benefit.

STRICT AND FREE STYLE.

In the meantime he is requested to examine and compare the preceding specimens with care and attention (commencing from example 351); and here he will see how few materials* are sometimes requisite to enable us, by a little ingenuity, to produce variety and pleasing effects. This truth will be still more illustrated and confirmed when we commence analyzing the compositions of some of our best and most classical authors, which we shall do presently; preparatory to this, it will be necessary to give a few hints with respect to what is called the strict and free styles of writing.

In the *truly* strict style, four sorts of notes only (that is, with respect to their duration) are allowed; for example: if the longest be a semibreve, then the shortest will be a quaver, the latter of which can be employed only as a passing note.

All dissonances, in which is included the fundamental 7th, require to be prepared upon the unaccented, and struck upon the accented part of the bar. No octaves or fifths on the accented part of a bar as exhibited in example 298 (k), are permitted, nor may they be thus prevented. The note of preparation must not be of less duration than the dissonance; and to add still more to the seriousness of the style, these dissonances must be suspensions \dagger . Consecutive major thirds, whether proceeding diatonically, or by skips, as well as all extraneous modulations, or progressions \dagger , are prohibited.

In the following example (at 1) the note C in the alto is succeeded immediately by $C \sharp$ in the inverted bass; this is called "a false relation between two parts," and is forbidden. A false relation is exhibited at (2) between G in the tenor, and $G \sharp$ in the bass; and at (3) between the soprano and inverted bass.



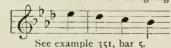
These are a few of the leading features characterizing the truly *strict* style; which style of writing, however, is now generally considered as antiquated, and almost entirely laid aside.

In the *free* style many licenses are permitted which would be quite inadmissible in the style just described. For instance: dissonances may be introduced upon the accented or unaccented part of the bar, prepared or unprepared.

These dissonances, when introduced thus, are sometimes written as at (a), but performed as at (b), and are called approgrammas.



* From these few notes are derived all the foregoing imitations and effects:-



- † Progressions of sequences are therefore particularly suited to the strict style. See Ex. 290 to 297.
- ‡ See examples 85, 86.

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It has already been explained that dissonances should resolve upon the same fundamental bass on which they are heard.*

In the free style, however, dissonances, instead of resolving upon the same bass, may resolve upon another bass, provided that the intervals of the resolved discords form either the common chord, fundamental 7th, or 9th, with that bass; so that, in point of fact, the bass on which the dissonance should have resolved is altogether omitted, and another substituted. This will be better understood if we peruse the following example, where, at I, the dissonances resolve as usual, and at II, they have been resolved upon a new bass. This may be called a licensed resolution of dissonances, and employed with great effect on various occasions.



ANALYZATION.

It is both instructive and amusing to trace the gradual and almost imperceptible change which has taken place in the compositions of eminent writers since the time of Corelli to the present; and how, with nearly the *same materials*, one author has constructed works so very different, with regard to their general style and effect, from that of others, that one would scarcely believe they had emanated from the same source. With the peculiarities and excellencies of the works of these great masters, then, the student should make himself acquainted; and, as this can only be accomplished by analyzing them,† we shall detail the method to be pursued on this occasion; and in order that we may preserve regularity and method in this branch of the study, let us divide our materials into the following parts:

The key, whether major or minor.

The time.

Fundamental basses.

Modulation and fundamental 7ths.

Dissonances.

Passing notes, auxiliary notes, and secondary harmony.

Periods.

Sections and imitation.

Each of these several parts shall be explained as we proceed.

* Page 82.

† The pupil will be much assisted in this study by perusing the work called "Practical and Theoretical Studies," being a selection from the compositions of Corelli, Handel, Haydn, Mozart, Beethoven, Clementi, etc., arranged for the pianoforte, and analyzed by the the author of this work.

The composition which has been selected for analyzation is the first concerto of Corelli, and commences in the key of D major.

- Q. How do we know that it is that key?
- A. Because D major has two sharps.
- Q. But as the relative minor B requires also two sharps, might it not be the latter?
- A. No; because the first chord then should have been B minor, being the key chord; besides, between the 7th and 8th of the scale, a semitone must be found. Had the key been B minor, the note A‡ being the 7th of the scale of that key, could not have been admitted; it must have been A‡.† This not being the case, the key is decidedly D major.

The time is long common time.‡

Let us now proceed to find the fundamental basses, that the ground upon which the superstructure of the present work rests may be clearly established.







The composition commences with the common chord of D; D, therefore, is the fundamental bass, which we place under the chord.

N.B. The notes E and G in the first and second violins are accented passing notes.*

If we examine the notes of the four parts (2), we find that they collectively produce the chord of A: the note A, therefore, we place as fundamental bass under that chord.

C, in the bass, being the 3rd of the chord, consequently produces the first inversion; viz., the chord of the 6th.

N.B. The note B, in the first violin, is an accented passing note.

At (3) the chord B minor arises from a modified bass † on the first of the scale, which is here used fundamentally.‡ The second chord (at 3), we find to be the chord of the fundamental 7th to E. The 7th is in the first violin, the 5th in the second violin, the 8th in the tenor, and the 3rd in the bass, producing the chord of the $\frac{6}{5}$; the note E, therefore, as fundamental bass, is likewise placed under the harmony, as exhibited in the example.

N.B. The note A, in the bass, is an unaccented passing note. E, in the same part, as well as E and B in the first violin, are notes arising out of secondary harmony.§

Continuing thus to proceed upon the same principle, D will be the fundamental bass at (5), E the fundamental bass at (7), and F# at (9).

The inverted bass E, at (10), arises from a *modified* bass, and is an imperfect common chord. From 29 to 35, the harmony arises out of a progression of sequences of 5 6. That they are sequences may be inferred from the uninterrupted and regular ascending progression of the 1st and 2nd violins by imitation.

N.B. The notes G and B in the bass (23), are unaccented auxiliary notes, and C, at (24), an accented auxiliary note.

The harmony from 49 to 52, arises from a progression of sequences of 7ths; this may be proved by the regular and uniform ascending 4ths, and descending 5ths of the fundamental bass, which progression, when divested of its auxiliary notes, will appear thus **:—



Now, if we add the harmony which the *progression of these* fundamental basses will admit of (a), and then compare that harmony with the 1st and 2nd violins in the original, the similarity will immediately appear; for it is only necessary to suppose that the quaver rest in the first violin stands in place of the 7th, and that this 7th previous to its resolution (according to secondary harmonies), has proceeded to a part of its chord (b), and the legitimacy of the fundamental basses and sequences from 48 to 52 is established. See also example 255.



The student may now continue to find the fundamental basses as already shown, and place them under the harmony, as exhibited in the example.

Let us now proceed to examine the modulations which have been introduced.

The movement commences in the key of D, in which it continues until (3), when a modulation to the dominant takes place, indicated by G # in the inverted bass, which ascends half a tone to $(a)^*$, E being a note of secondary harmony.

At 5, a modulation to D, which is indicated by G‡ in the inverted bass† at 4. At 6, a modulation to G is indicated by C‡ in the first violin. At 8, a modulation to A, and at 10, to the relative minor, both 0, which are indicated by the inverted bass. From 12 to 17, various modulations have been introduced, which require no further explanation, as the student will easily discover them himself.

DISSONANCES.†

As the fundamental bass from 3 to 4, 5 to 6, 7 to 8, etc., ascends by 4ths, or falls by 5ths, we are enabled to introduce the dissonances of the 9th or 4th.

- Q. What dissonance has the composer employed? A. The 9th.
- Q. How and where is it prepared? A. It is prepared at 3 by the 5th in the second violin, where it resolves into the octave.

A question naturally presents itself here: Why did not the composer introduce the 9th and 4th alternately, as the progression of the fundamental bass admitted of both these dissonances?—thus:



It would have obviated that monotony which must naturally arise by employing the same dissonance so frequently and consecutively.

Or, by employing both dissonances together, thus:



It would certainly have produced more variety and interest. In that case, however, the imitations which appear between the first and second violin, from 5 to 17, must necessarily have been omitted.

N.B. The process of examining the motion of the fundamental bass, as regards the introduction of dissonances, may thus be continued to the end of the composition.

That the composer should have figured the bass at 32 with the dissonance of the 9th, without subsequently introducing that dissonance, may seem strange. This seeming omission will be explained when we arrive at Imitation; at present, we must consider the *quaver rest* in the second violin to stand in the place of the *dissonance*, as pointed out by the small notes, and which has already been explained when

treating on fundamental basses. The same occurrence takes place at 33, 49, 50, 51, etc. At 33, the 9th has been prepared by the 3rd; at 34, by the 5th, but resolved into the 3rd.* At 11, the fundamental bass having ascended a 5th,† the dissonances of the 6 have been introduced.

- Q. How and where have these dissonances been prepared?
- A. The 4th has been prepared in the second violin by the 8th, and the 5th in the first violin by the 3rd.

PERIODS.

From 1 to 4 comprises a half period by modulation.[‡] From 5 to 6, 7 to 8, 9 to 10, are sections of modulations.§ The period, consisting of six bars, concludes at 12 in the relative minor of the original key. From 13 to 20, are sections of modulation similar to the preceding; from 13 to 22 a half period by modulation. Here, in order to give more dignity and consequence to the half period, the author adds an odd bar, by which it is made to contain five bars.

From 23 to 37, is a half period, divided into sections by modulation and progression. From 24 to 25, 26 to 27, are sections of modulation. From 30 to 31, 32 to 33, etc., are short sections by progressions, ending at 37 with a half period by progression. From 39 to 42, a short period ending in F# minor. From 43 to 48, etc., sections of modulation; from thence to 53, sections by progression.

IMITATION.

The subject at 5 and 6, in the first violin, is repeated at 7, 8, 9, and 10, by the *same instrument* each time a whole tone higher.¶ Instead of which, had 7, 8, been written in the *second violin*, and 9, 10, in the tenor, it would have produced imitation, and been less monotonous.

At 23, the first violin commences a short subject on the accented part of the bar, which is imitated or answered by the second violin, on the unaccented part of the bar, in the unison. This strict imitation continues uninterruptedly until we arrive at 30, where the imitation, as far as rhythm is concerned, still continues; but the intervals are different in their progression from those of the first violin. Here, that the imitation might be pursued in rhythmical order, it became necessary to suppress the dissonances at 32 and 33, of which mention has already been made.** The imitation from 42 to 48, is similar to that aiready described from 23 to 34.

It may seem strange that the 3rd of the dominant in the first violin (at 41), instead of proceeding to its 8th, should have ascended a 9th; but this was necessary, in order that that part (viz., the 1st violin) might commence the subject of imitation. It will be perceived that the third of the tonic chord at 42 has been omitted; such omissions, however, are very frequently to be discovered in the works of ancient composers, particularly when closing in minor keys.

The parts cross each other sometimes very unwarrantably: at I and 39, the second violin and tenor, without any ostensible cause, appear above the first violin. Why has the author permitted the tenor to appear above the first violin at 59? — Had that part been written an octave lower, it would have been in its proper situation. To prevent the consecutive 5ths in the resolution of the chord of the diminished 7th, between the second violin and tenor at 56, and between the first violin and tenor at 58 (the 9th of the fundamental bass being in both cases above the 5th), the author has caused the tenor to fall to the 5th of the following bass, instead of the 8th. Had the dissonance of the 4th not been introduced, the 5th might have ascended to the 3rd.

It will be perceived that the fundamental basses have, in the commencement, been figured with *all* the dissonances which their progressions would admit of. The pupil is advised to figure the rest himself, and he will then see how much more may be added to the harmony.

* See Ex. 182 (b) † See Ex. 126 (d). † See Ex. 321, 322. § See Ex. 323 (c).

* See page 154. ¶ A similar progression of sequences, ascending whole tones, will be found in Handel's Hallelujah Chorus, to the words "King of kings." ** See page 238.

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As music may be considered a language capable of portraying all the passions and feelings of which the human mind is susceptible, and as a composition which lays any claim to excellence ought to possess the power of awakening in us at least some of those feelings, we shall proceed to make a few general remarks upon the effect produced by the composition just analyzed, with reference to that object.

The introduction, in its effect, is noble and majestic. The first violin performs a melody portraying kindness and affability; the steady and measured pace of the bass proclaims dignity and self-possession.

The second violin and tenor play, of course, mere subordinate parts; for while the former appears humbly to echo the sentiments of his superior, the latter is making exertions to attract notice by his little sections of dissonances. Thus the introduction continues to proceed with a degree of seriousness verging on solemnity, until we arrive at 23; here, however, the scene changes; the allegro, which now commences, is gay and playful; the second violin appears to mock the first violin, while the bass, having as it were dismissed all state and formality, seems to make amends for the restraint imposed upon himself, and gives way to playfulness and good-humor. This, when contrasted with its former solemnity and sobriety of pace, appears truly comic.

The effect of the passage in the bass, as it continues to ascend, leads us to imagine that, during its progress, it increases in velocity. The tenor, who during four bars had been a silent spectator, joins the party at 31, and thus they proceed together in a manner calculated to portray a high feeling of joy and ecstasy, until they arrive at the half period at 37. Here the parties appear to be brought, for an instant, to a state of reflection; the adagio movement, preceded by the pause, certainly produces that effect upon the mind. This reflection, however, is not of long duration; the former scenes of merriment and joy are resumed at 42, and continue, without interruption, to 53.

We shall now take, for our subject of analyzation, an adagio, selected from one of Hadyn's quartets.

It is an elegant and highly-finished composition; and, like all the productions of this great master, contains abundant matter for the contemplation of the student. Simplicity and variety are so happily blended, that we scarcely know which to admire most. In order that the student may be better enabled to understand the beauties and excellencies of this composition, we shall, preparatory to our entering upon the particulars of each portion, first explain the general plan and contrivance of the whole.















^{*} See example 173; also 210, 211.

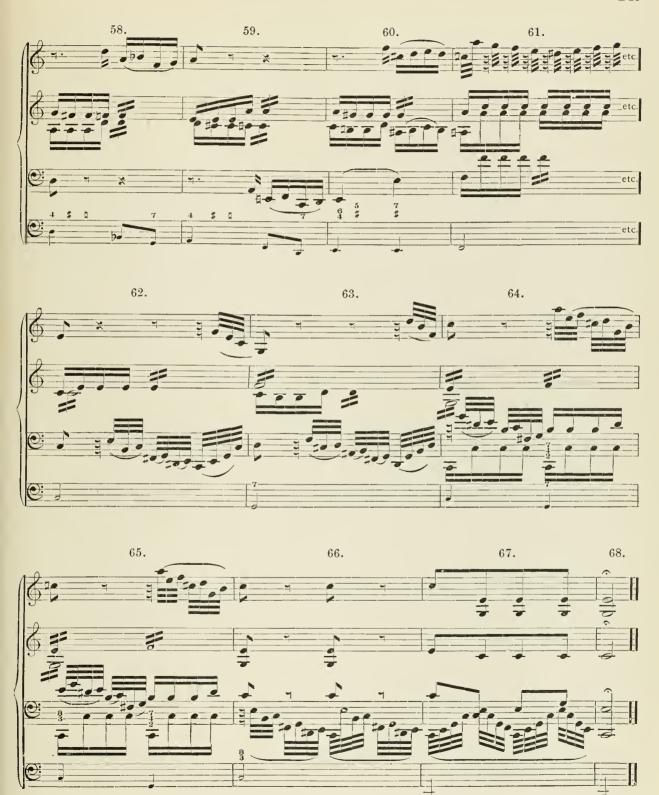












It will be found to comprise three subjects: the first, a graceful cantabile movement, contains a period of eight bars, divided by the half period at 4. This subject, with a little alteration, is repeated from 9, an octave higher, and ends with a cadence at 16. Upon this last bar commences a series of sections by modulation, on which is constructed, and afterwards continued, the second subject, commencing with the bass at 16. This subject contains two bars, and is divided into two portions; the second portion of which, 17, is given to the first violin. By this contrivance, a sort of conversation is maintained between these two parts as far as 20.

Here these parts interchange subjects, after which the conversation ceases at 22.

The first violin now proceeds alone, with passages which are constructed in such a manner that we are still enabled to recognize, though but faintly, the subject of the bass, as well as that of the first violin *

At 25, the third subject commences, and after various modulations, closes with a cadence in the dominant of the original key at 33. Here the author, instead of reiterating the first subject, most judiciously introduces one which, though bearing (with respect to its rhythmical form) a strong resemblance to the first, is, in fact, only calculated to recall it to our recollection. By this admirable contrivance, all extraneous or new matter is excluded, and unity and variety are preserved; for, as a mere repetition of the original subject in the dominant would have produced monotony, so an entirely new subject would have had the effect of injuring the simplicity of the whole. This subject continues to 40, where it closes with a cadence.

Here the second subject is resumed by the bass and the first violin in the dominant of the original key, and ends at 44, where a series of imitations in all the parts commences, and is continued to 47. It will be observed that the passage here selected by the composer for imitation does not contain any *new* matter; it is, in fact, only the last half bar of the second subject at 43.

Thus the unity of the whole is preserved without any sacrifice of variety.

As the passages of the first and second violins, which follow the imitations from 47 to 48, are written upon the dominant harmony of the original key, an expectation of the approach of that key is excited preparatory to its re-introduction, which takes place at 49†; at the close of which the first portion of the second subject is again resumed between the first violin and the bass, with this difference, however, that the first violin commences that subject instead of the bass, which now replies to it in the dominant.

At 55, the third subject, which continues for eleven bars, is again introduced, with some alteration in its general construction; upon which follows once more, and for the last time, the first subject.

A series of imitations, founded on the passage of the first violin at 22, commences between the first violin, tenor, and bass, and thus continues until the whole is concluded. This may be considered as the general plan of the composition: let us now enter mere minutely into the examination of its various parts. The key is C major. A false cadence occurs between 2 and 3, after which a modulation to D minor takes place, indicated by C‡‡ in the first violin§. At 3, follow two sequences of 6ths, after which a modulation to the original key is effected. At 5, the first bar of the subject is repeated, but differently harmonized; for that which at 2 was only a progression to A minor, is here become a modulation.

At 7, a modulation to F has taken place, after which we proceed, by an irregular cadence ¶, to the original key, and thus close a period of eight bars, the half period of which is by progression.

* The legitimacy of the suspension of the 3rd at 17, 19, and 21, in the tenor, whilst the 3rd itself appears in the first violin, is questionable. This oversight (if we may be allowed to use that term when applied to the works of so great a composer) is corrected at 41 and 43.

§ It may here appear that the fundamental 7th in the alto has ascended into the 5th, instead of resolving into the 3rd; the author, however, does not in the present instance consider this chord as that of the fundamental 7th, but the first inversion of the imperfect common chord, See Ex. 282 (d); the same occurrence will be found to take place frequently in the works of this author and of others.

From 9 to 12, the first half period is repeated, with nearly the same harmony as the preceding. At 13, a modified bass on the fourth of the scale is employed fundamentally**. Here a demonstration is made to modulate to D minor, which modulation is, however, prevented by the false cadence at 14; a modulation to F is then introduced, succeeded by the chord of the compound sharp sixth, \$\frac{1}{5}\$, the resolution of which is suspended,†† and a final cadence once more closes the former period. Upon the last bar (16) of this period the second subject commences with the bass, founded on the following simple melody:—



which is made characteristic and interesting by the introduction of extended auxiliary notes at 16, and by the simple passing and auxiliary notes at 17. From 16, a modulation takes place to G, and from thence to D minor; here the author proceeds, for the sake of variety, to the dominant of the last key, by progression: the same occurrence takes place from 20 to 21, where the first violin and bass interchange subjects.

At 24, a modulation is effected to the original key; the note A, in the second half of that bar, is a modified bass on the first of the scale, and G# in the second violin, a passing note*.

At 25, the third subject commences upon the chord of the dominant 7th, whilst in the act of modulating to G. G# at (27), in the first violin, is an ascending dissonance, viz., a retardation of the 5th by the 4th†. At 28, a modulation to G minor takes place, and at 29, to Eb. In the same bar a modulation to G (the dominant of the original key), commences with the compounded sharp sixth, #5, the resolution of which is suspended from 30 to 32‡, and closes at 33 with a final cadence. It may now be said that the composition is virtually finished; for that which follows (if we except the first subject, altered as it appears from 33 to 40), is in substance a repetition, in various forms and imitations, of that which has already been noticed, and with which it is presumed the student is now sufficiently acquainted. We shall, therefore, proceed, in conclusion, to make a few general remarks on each of the three principal subjects, and endeavor to discover the feelings which they are calculated to excite.

The melody, harmony, and modulation of the first subject from 1 to 8 is soothing and placid; it portrays the peaceful and happy state of a united family, gliding along the stream of life without care or anxiety. This kind and affectionate feeling is particularly observable in the first eight bars, when contrasted with the eight bars which immediately follow; for the latter, being written an octave higher, exhibit a slight degree of excitement, which is increased, from 13, by the rapid succession of modulations ending with the chord of the compounded sharp sixth, \$6.56. This excitement seems to increase as we proceed with the second subject from 16 to 24. Here it portrays a conversation between two persons at variance, whilst the accompaniments of the second violin and tenor express anxiety. From 22, the first violin seems triumphantly to proceed alone, having, as it were, subdued its antagonist, the bass, which now joins in the accompaniment of the second violin and tenor. Here (at 25) commences the third subject, which, even from its rhythmical form alone, is calculated to portray agitation, fear, distress, anguish, palpitation of the heart, and as it were a gasping for breath.

At 28, where the modulation to E[†] commences, the mind seems to be gradually wrought up to the extreme of agony bordering on despair; at 30, it appears to be relieved from those dreadful feelings, and gradually to resume its original and peaceful state in the soothing and gentle strain of harmony which follows at 33.

The preceding specimens of analyzation will suffice to show how the student may proceed on similar occasions.

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In conclusion, the author makes the few following observations, which he hopes will be useful in future progress:—

It frequently happens that although the student sets out with the most determined resolution to study a work of science with care and attention, yet overlooks many of those nice points of connection which are indispensable to the proper understanding of the whole. This imprudent haste may often be traced to over-anxiety in the pursuit of knowledge; to too much confidence in the student in quickness of perception, or to natural impatience. But to whatever cause this error may be attributed, the pupil cannot be too cautious in avoiding it. If one has been really desirous of acquiring a perfect knowledge of the work, and has exercised upon the rules as they progressively presented themselves, he must have observed,—

First: That from the commencement to the end they are so closely interwoven, and constitute collectively such a chain of causes and effects, that they could not be studied in a desultory or disjointed manner.

Secondly: It must have been perceived, as he proceeded thus step by step, new and interesting matter continually presenting itself, expanding the views, and encouraging further study.

Thirdly: That discoveries have been made, without even travelling out of the way in search of them.

Should the learner have thus proceeded, and "made haste slowly," he is advised by all means to make an attempt at composition. All knowledge is in progression, and it is only by degrees that excellence can be obtained. To acquire facility in composition much practice is absolutely necessary.

Should it be said that genius and talents are requisite to make a composer, we answer certainly: to make a great composer these gifts are indispensable; but they are equally so to make a great poet, painter, or architect, etc. But shall none compose, write poetry, paint, etc., but those who are thus gifted? No one will pretend to say that those numerous composers who have lived from the earliest time to the present day, have all been, or are, in possession of those peculiar gifts! Shall we not build houses because we have not the genius and means to construct palaces? Is it then absolutely necessary, in order to compose, that we possess the genius and imagination of a Gluck, a Handel, a Mozart, or a Beethoven? Shall none dare to write but those who can produce a grand sinfonia, serious opera, or oratorio? May not pleasure as well as profit be derived from the composition of songs, glees, sonatas, rondos, airs with variations, etc.? Let us but make a beginning. This, however, it must be confessed, has hitherto been the great stumbling-block. How shall I begin? How shall I set about it? These, it cannot be denied, are very natural and reasonable questions. If the pupil, however, has carefully studied the construction of periods and melodies, the necessity of asking such questions no longer exists; for what beginning can be more simple, or what path more secure than that which is pointed out to him from Ex. 335. For instance: he draws an outline of his intended composition, fills it up with fundamental basses, extracts inverted basses, and constructs a counter melody; to which he adds the rest of the parts, dissonances, passing and auxiliary notes, etc. All this is accomplished without difficulty, because the rules are all determined, and nothing is left to chance. During this process, no peculiar musical genius or feeling, no imagination or nicely-discriminating musical ear is required *; moderate talents, accompanied with a little patience and reflection, are sufficient to produce that which will lead and encourage him to higher exertions †.

The student will find new matter perpetually springing up, as it were, spontaneously under his hands; subjects, which at the commencement appear as mere trifles, may, subsequently, by a little contrivance (but still according to rule) be made most interesting.

By way of illustration of the above, and encouragement to the student to make the attempt at composition, we shall first trace the gradual progress and subsequent changes of a simple melody and harmony as it emanates from the outline, or sketch; and then show by what a simple and easy process the original materials are afterwards capable of being converted into new matter, almost endless in variety and effect.

- * A German author says: "Eine Theorie der Kunst ist Schönheit ohne Gefühle und Phantasie." The theory of art is beauty without feeling and imagination. How true!
 - † In proof of this, it is only necessary to examine the gradual progression of the outline of the melody from Ex. 335 to 345.

ANALYZATION. 249

Let us suppose, for instance, that a melody has been constructed and harmonized according to the rules commencing from Ex. 335. The inner parts of the harmony may, perhaps, only with a slight alteration, furnish melodies which may be re-harmonized in a variety of ways, by merely changing each time the original fundamental bass and inversions.

Secondly: By re-harmonizing the original melody and adding a few modified basses, the inner parts of which will again furnish new melodies.

Thirdly: By harmonizing the original melody according to the rules commencing from Ex. 180.

Fourthly: By adding modified basses to the air thus harmonized. Let it be recollected that at each change of harmony a corresponding change of dissonances and passing notes also takes place.

Hitherto we have only considered what may be effected by a mere change of harmony; but what shall we say when,

Fifthly: We likewise alter the measure of time and rhythm of the original subject, or any of those subjects which have arisen from it? Indeed, the change, on these occasions, is frequently so great, that the original source from which these harmonies have emanated is no longer to be recognized.

Sixthly: By letting the alto and tenor interchange places.

Seventhly and lastly: Extension of periods, and imitation between the parts.

Now that all these endless varieties of effects do arise from a simple outline, such as has just been decribed, cannot be denied. Then where is the difficulty which shall deter the student from making an attempt at composition? The process here pointed out is so simple, and, it may be added, interesting, that it only requires in us the will, and the object is accomplished. The author repeats once more, that if the students but make the attempt, and follow the rules contained in this work with patience and perseverance, they will not only have no cause to be dissatisfied with their progress, but will discover a source of amusement and improvement, of which they can form no adequate idea without the trial.



A TREATISE

ON

MODERN INSTRUMENTATION

AND

ORCHESTRATION.

ABRIDGED FROM HECTOR BERLIOZ.

THE ART OF INSTRUMENTATION.

The following is a complete list of all the instruments employed in writing music.

Violins. Violas. Violes d'amour. Played by a bow, Violoncelli. Stringed instruments, Double basses. Harps. Played by the fingers, { Guitars Mandolins. With keys-Pianoforte. Hautboys. Corni Inglesi (English). Bassoons. Bassons de quinte. With reeds, { Double-bassoons. Clarinets. Corni di bassetti. Bass-clarinets. Saxophones. Without reeds-Flutes, great and small. Melodium. Wind instruments. With keys, Concertina. Horns. Trumpets. Cornets. With mouthpiece, Bugles. and of metal, Trombones. Ophicleides. Bombardons. Bass-tubas. Voices of men, women, children, and artificial soprani. Kettle-drums. Ancient cymbals Sets of bells. Of definite pitch, Glockenspiel. Keyed harmonica. Bells. Instruments Drums. of percussion, Long-drums. Of indefinite Tambours de basque (or pitch, and pro-Cymbals. [Tambourine]. ducing various characteristic Triangles. noises, Gongs.

Pavillon Chinois.

The employment of these instruments,—either for coloring the melody, harmony, and rhythm, or for producing peculiar impressions independently of all aid from the three other great musical powers,—constitutes the art of instrumentation.

The object of this treatise is, first,—the indication of the *extent*, and of certain essential parts of the *mechanism* of instruments; and then, the study of the *quality of tone*, particular *character*, and powers of expression, pertaining to each of them; and lastly, the best method known of proceeding, in order to group them appropriately.

INSTRUMENTS PLAYED WITH A BOW.

THE VIOLIN.

The four strings of a violin are usually tuned by fifths, G, D, A, and E, thus:—



These strings are called open when not stopped by the fingers of the left hand, and are indicated by an o placed over them.

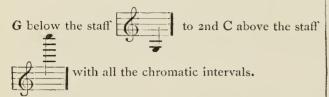
Some eminent composers, in order to give more brilliancy to the instrument, occasionally raise one or all the strings half a tone, thus keeping the majority of the strings open; the sonorousness being greater when open, than when pressed in keys where they could not have occurred, with the ordinary method of tuning.

Frequently merely the G is raised a whole tone.

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Sometimes the G only is lowered half a tone, in order to produce softer and deeper effects.

According to the degree of skill at present attained by violinists, the compass which may be assigned to the violin in a well constituted orchestra is from



Great performers exceed this compass by several notes higher; and even in the orchestra, a farther degree of acuteness may be obtained by means of *harmonics*—of which mention will be made hereafter.

Shakes are practicable on all the notes; but the extreme difficulty of those on the three topmost notes—A, B, C, should be avoided; especially in the orchestra

The minor shake on the fourth string, of the G to the A7, should be avoided as much as possible:—it is harsh and disagreeble.

Chords of two, three, or four notes, which may be struck, or played in arpeggio, on the violin, are very numerous; and the different effects they produce extremely various.

Chords of two notes, resulting from what is called the double-string, are well suited to melodious designs, to sustained phrases either forte or piano, to accompaniments of all kinds, and to the tremolo.

Chords of three or four notes, produce a bad effect, when played piano; they seem rich and energetic only when played loud and boldly; as the bow can then strike the strings sufficiently together to make them vibrate simultaneously.

Of these three or four notes, two at most can be sustained; it is therefore useless, in a slow or measured movement, to write thus:—



The two upper notes are alone capable of being held; therefore, it is better to indicate the passage in this way:—



All chords contained between the low G and the low D are impossible: since there is only a single string to produce the two notes. When there is need of a harmony in this extreme point of the scale, it can be obtained in the orchestra only by dividing the violins, indicated by the word divisi, or divisés (divided), and à deux (in two), written over the passage:—



The violins are then separated, that one set may play the high part, and the other the lower. Beginning with D (3rd string) all intervals of a second, a third, a fifth, a sixth, a seventh, an octave, are practicable. But they become more and more difficult in proportion as they advance upon the high strings.

The unison is sometimes employed on a double string; but, besides that it can be done upon many other notes, it is well to limit it to these three, D, A, E; because they are the only ones that offer, with the facility which ensures good execution, a variety of quality in tone, and a force of sonorousness, which result from the circumstance of one of the strings being open:—



In the other unisons there is no open string, their execution becomes difficult, and strict intonation very rare.

A bass string can cross an upper open string, by pursuing an ascending movement while the open string remains as a pedal:—



It will be seen that the D, here, remains open, while the ascending scale is executed throughout upon the fourth string.

The intervals of a *ninth* and a *tenth* are feasible, but not so easy as the preceding; it is injudicious to write them, for the orchestra, unless the lower string is *open*:—



Avoid, as excessively difficult,—not to say impossible,—leaps of a double string, which demand a difficult change of position:—



Such leaps should not be written, unless the two upper notes belong to a chord of four notes which may be struck together:—



In the following example, however, the four notes cannot be struck simultaneously, but with some difficulty (those of the last chord alone excepted); and the leap from low to high is not less easy,—the two lower notes being on open strings, and the two others with the first and third fingers:—



Among chords of three, and particularly of four notes, the best and most sonorous are always those which contain most open strings. If none of these etrings can be had, for a chord of four notes, it is better to rest contented with a chord of three notes.

Chords may be executed in arpeggio, from which frequently results the most agreeable effects—in a pianissimo especially.

Nevertheless, there are designs, similar to the preceding, of which four notes cannot, without extreme difficulty, be played at once, yet which are easily executed in arpeggio.

If it be required to strike an isolated chord, in D minor or major, the disposition of letter A should not be employed, being too difficult when not led up to; it is better to take the following, which is quite easy, and more sonorous, on account of the effect of the two open strings:—

It may be seen by the preceding that all chords of three notes are possible for the violin; if care be taken, in those which contain no open string, to spread the parts sufficiently to allow an interval of a fifth or sixth

between them. The sixth may be found either above or below, or in both at once:—



Certain chords of three notes being practicable in two ways, it is always better to choose that one which contains an open string:—



Double shakes in thirds may be made, beginning with first Bb below:—



But as they are of more difficult execution than simple shakes, and as the same effect may be obtained more neatly by means of two separate violin-parts, it is better, in general, to abstain from them in the orchestra.

The tremolo, simple or double, by many violins, produces several excellent effects; it expresses trouble, agitation, terror, shades of piano, of mezzo-forte, and of fortissimo, when it is placed on one or two of the three strings, G, D, and A; and when it is not carried much above the middle Bb;

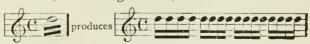
It has something of a stormy, violent character, in the *fortissimo* on the middle of the first or second string;

It becomes, on the contrary, aerial, angelic, when employed in several parts, and *pianissimo* on the high notes of the first string.

Occasion may here be taken to mention, that the custom is to divide the violins into two sets; but there is no reason why they should not be subdivided into two or three sets, according to the object which the composer has in view.

To return to the tremolo. The composer must write with precision, keeping in view the nature of the movement itself, in which the *tremolo* occurs.

Thus, in an Allegro assai,



In an Adagio, it should be written:-



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and even sometimes, if the movement is still slower than an Adagio:—



The tremolo below and in the middle of the third and of the fourth string, is much more characteristic in fortissimo, if the bow strike the strings near the bridge. In large orchestras it produces a sound like that of a rapid and powerful cascade. This mode of execution should be indicated by the words: near the bridge.

Advantageous use is sometimes made, for certain dramatic accompaniments of an agitated character, of

the broken tremolo, sometimes upon one string:—



sometimes upon two strings:

Lastly, there is another kind of tremolo, never employed now-a-days; but of which Gluck has made admirable use in his recitatives; and may be entitled the undulating tremolo. It consists of a not very rapid utterance of two bound notes on the same tone; while the bow never quits the string.

In these unmeasured accompaniments, the performers cannot precisely hit the same number of notes played in each bar,—some playing more, others fewer; and there results from these differences a sort of fluctuation, or indecision in the orchestra, perfectly adapted for rendering the uneasiness and anxiety of certain scenes. Gluck wrote thus:—



The different kinds of *bowing* are of great importance. They should therefore be carefully indicated, —according to the nature of the idea which is to be conveyed—by the following signs:—

For detached notes:-



For slurred notes, two and two:



For extended slurs:-



For staccato, or lightly detached notes, simple or double, which are to be executed during a single drawing of the bow, by means of a succession of small jerks advancing as little as possible:—



For markedly detached notes, which are to give to the string all possible sonorousness, by permitting it to vibrate alone after the bow has vigorously struck it, and which particularly suit pieces of a haughty, grand character, and of moderate movement:—



Reiterated notes, two, three, and four times (according to the rapidity of the movement), give more force and agitation to the sound of the violins, and suit many orchestral effects, in all kinds of shades:—



Nevertheless, in a phrase of broad movement and vigorous character, simple notes markedly detached, produce a much better effect, when a true tremolo is not employed upon each note. And the following passage:—



would be,—taking into consideration the slowness of the movement—of an incomparably more noble and more powerful sonorousness, than this one:—



Composers might be considered too minute probably, should they indicate the movements of the bow in their score; still, it is well, when a passage demands lightness, extreme energy or amplitude of sound, to indicate the mode of execution by these words:—

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"With the point of the bow;" or "with the heel of the bow;" or "with the full length of the bow," written over each note. So the words,—"On the bridge," and "On the finger-board," designating the spot nearer or farther from the bridge, where the bow should strike the strings, the same remarks may apply. Those metallic sounds, slightly rough, which the bow draws forth when near the bridge, differs greatly from those soft veiled sounds which are generated when it is passed across the finger-board.

Harmonics are those sounds which are generated by touching the strings with the fingers of the left hand, so as to divide them in their length, yet not with sufficient pressure to place them in contact with the finger-board, as is the case for ordinary sounds.

These *Harmonics* possess a singular character of mysterious softness; and the extreme acuteness of some of them afford the violin, in the upper part, an immense compass. They are *natural*, or *artificial*.

Natural harmonics are those which are produced by touching certain points of open strings.

Artificial harmonics are to be obtained very distinctly throughout the extent of the gamut, by means of the first finger; which, firmly pressed upon the string, while the other fingers touch it, serves for a moveable nut.

The touched octave gives its unison.

This fingering is little used, excepting for the 4th string, on account of its inconvenience.

The touched fifth gives its octave above.

This fingering is easier than the preceding, and less so than the following.

The touched fourth gives its twelfth above.

The touched major third gives its double octave above.

The minor third gives its major seventeenth above.

The touched major sixth gives its twelfth above.

The positions of touched fourth and fifth are undoubtedly the most advantageous.

The harmonics of the fourth string have something of the quality of a flute; they are preferable for delivering a slow air. The harmonics of the other strings acquire more delicacy and tenuity in proportion as they are higher; it is precisely this character, and their crystalline quality which renders them appropriate to chords that may be called fairy-like. However they may have become familiar, now-a-days, to our young violinists, they should never be employed in a lively movement; or, at least, care should be taken not to give them rapid successions of notes, if their perfect execution is to be insured.

It is lawful for a composer to write them in two, three, and even in four parts, according to the number of violin parts. The effect of such chords sustained, is very remarkable, if it be warranted by the subject of the piece, and well mingled with the rest of the orchestration.

Sordines (or mutes are little implements which are placed on the bridge of stringed instruments in order to deaden their tone; and to give them at the same time a mournful, mysterious and softened tone, which is frequently applied in all styles of music.

The composer, when introducing the use of sordines in the middle of a piece (indicated by these words "con sordini"), should not forget to give the performers time to take them and place them; consequently, he will be careful to arrange a previous rest for the violin parts about equivalent to the duration of two bars in four-time (moderato).

A rest of such length is not necessary, when the words "senza sordini" indicate they are to be removed. The sudden transition of sounds thus deadened to sounds clear and natural, is often of immense effect.

The *Pizzicato* is in very general use for all stringed instruments. The sounds obtained by vibrating the strings with the finger, produce accompaniments approved by singers, since they do not cover the voice; they do well also for symphonic effects, even in vigorous orchestral sallies, either in the whole band of stringed instruments, or in one or two parts alone.

In a *forte*, it becomes necessary to write it, generally, neither too high nor too low; the extreme upper notes being shrill and wiry, and the deeper ones too dull.

Pizzicato chords of two, three, and four notes, are equally valuable in a fortissimo. Accompaniments pizzicato *piano*, have always a graceful effect.

It frequently happens, that, in order to give a pas sage greater energy, the first violins are doubled by the second violins an octave lower; but, if the passage does not lie high, it is better to double them in unison It happens even, that if additional force should be desirable by subjoining the violas an octave below, this weak lower doubling, on account of the disproportionate upper part, produces a futile murmuring, by which the vibrations of the high violin notes are rather obscured than assisted. It is preferable, if the viola paracannot be planned in a prominent manner, to empiosit in augmenting the sound of the violoncellos, taking care to put them together (as much as the low com-

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pass of the instrument will permit) in the unison and not in the octave.

Violins are more brilliant, and play more easily in keys which leave them the use of the open strings. The key of C, alone, appears to form an exception to this rule, on account of its sonorousness, which is evi-

dently less than that of the keys of A and E, although it keeps four open strings, while A keeps but three, and E two only. The quality of the various keys for the violin may be thus characterized; together with their greater or less facility of execution:—

	M	AJOR.	Minor.			
C.	Easy.	Grave; but dull and vague.	C.	Easy.	Gloomy; not very sonorous.	
C#.	Very difficult.	Less vague; and more elegant.	C♯.	Tolerably easy.	Tragic; sonorous; elegant.	
Db.	Difficult; but less so than the preceding.	Majestic.	Db.	Very difficult.	Serious; not very sonorous.	
D.	Easy.	Gay, noisy, and rather common- place.	D.	Easy.	Lugubrious; sonorous; somewhat commonplace.	
D #.	Almost impracticable.	Dull.	D #.	Almost impracticable.	Dull.	
Eb.	Easy.	Majestic; tolerably sonorous; soft; grave.	Eb.	Difficult.	Very vague; and very mournful.	
Ε.	Not very difficult.	Brilliant; pompous; noble.	E.	Easy.	Screamy; and slightly common- place.	
Fb.	Impracticable.		Fb.	Impracticable.	•	
F.	Easy.	Energetic; vigorous.	F.	Rather difficult.	Not very sonorous; gloomy violent.	
F#	Very difficult.	Brilliant, dashing.	F #.	Less difficult.	Tragic; sonorous; dashing.	
Gb.	Very difficult.	Less brilliant; more tender.	Gb.	Impracticable.		
G.	Easy.	Rather gay; and slightly commonplace.	G.	Easy.	Melancholy; tolerably sonorous; soft.	
G #.	Nearly impracticable	Dull; but noble.	G #.	Very difficult.	Not very sonorous; mournful; elegant.	
А в.	Not very difficult.	Soft; veiled; very noble.	Ab.	Very difficult; almost impracticable.	Very dull, and mournful; but noble.	
Α.	Easy.	Brilliant; elegant; joyous.	A.	Easy.	Tolerably sonorous; soft; mournful; rather noble.	
Α±.	Impracticable.		A #.	Impracticable.	·	
В в.	Easy.	Noble; but without pomp.	В b.	Difficult.	Gloomy; dull; hoarse; but noble.	
В.	Not very difficult.	Noble; sonorous; radiant.	В.	Easy.	Very sonorous; wild; rough; ominous; violent.	
С ь.	Almost impracticable.	Noble; but not very sonorous.	Cb.	Impracticable.		

For the ready reference of composers unfamiliar with the violin we append the following:

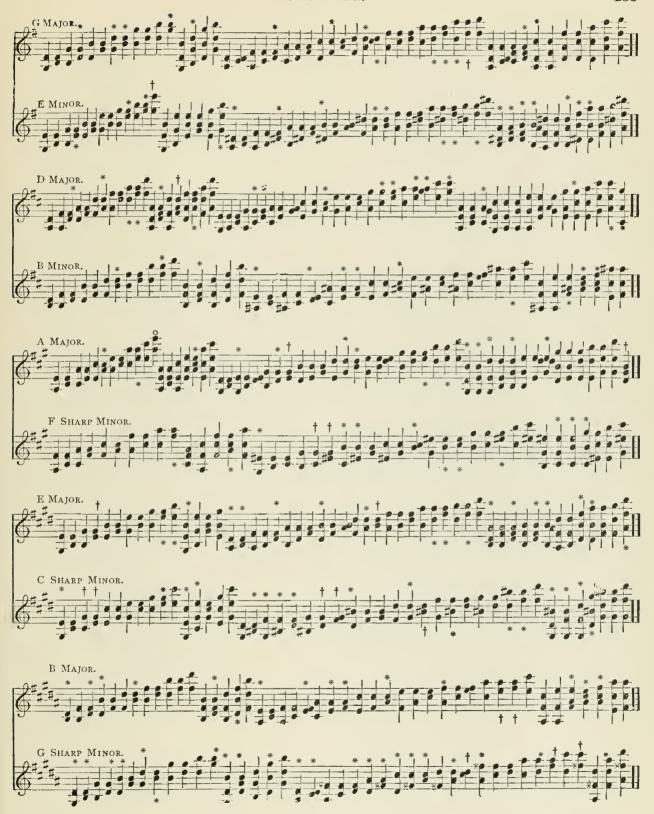
TABLE OF CHORDS FOR THE VIOLIN

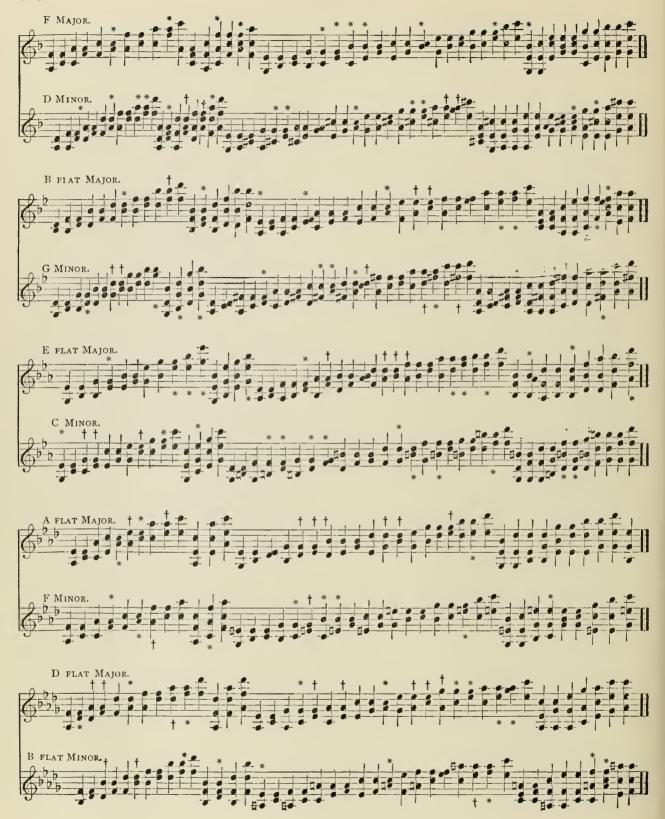
IN ALL THE MAJOR AND MINOR KEYS. Copyrighted.

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Note. — Chords marked (*) are playable, but should be avoided when simple, easy fingering is desired. Those marked (†) are still more difficult.









Instruments played with a bow, of which the combination forms what is somewhat improperly termed a quatuor, are the base and constituent element of the whole orchestra. From them is evolved the greatest power of expression, and an incontestable variety of different qualities of tone. Violins particularly are capable of a host of apparently inconsistent shades of expression. They possess (as a whole) force, lightness, grace, accents both gloomy and gay, thought, and passion. It is not needful to calculate for them the duration of a holding note, and to contrive for them occasional rests; they are sure never to be out of breath. Violins are faithful, intelligent, active and indefatigable servants.

Slow and tender melodies, confided too often, nowa-days, to the wind instruments, are nevertheless never better rendered than by a mass of violins. Nothing can equal the touching sweetness of a score of first strings made to sing by twenty well-skilled bows. That is, in fact, the true female voice of the orchestra,—a voice at once passionate and chaste, heart-rending, yet soft, which can weep, sigh, and lament, chant, pray, and muse, or burst forth into joyous accents, as none other can do.

THE VIOLA.

The four strings of the viola are generally tuned in fifths, like those of the violin; and at a fifth below them:—

Its ordinary compass is at least three octaves:—from low C to C above the staff.



It is written in the C clef (3rd line); and in the G clef, when it extends high.

What has been said on the subject of shakes, bowing, chords struck together or played arpeggio, harmonics, etc., is throughout applicable to the viola,—considered as a violin a fifth lower.

Of all the instruments in the orchestra, the one whose excellent qualities have been longest unappreciated, is the viola. It is no less agile than the violin, the sound of its strings is peculiarly telling, its upper notes are distinguished by their mournfully passionate accent, and its quality of tone altogether, of a profound melancholy, differs from that of other instruments played with a bow. It has nevertheless, been long neglected, or put to a use as unimportant as ineffectual.

Melodies on the high strings of the viola have a marvellous beauty in scenes of a religious and antique character. This quality of the viola,—so choice when it is judiciously employed, and skilfully contrasted with the qualities of tone of violins and other instruments,—necessarily soon palls.

When the violoncellos play the air, it is sometimes excellent to double them in unison by the violas. The tone of the violoncellos then acquires additional round ness and purity, without becoming less predominant. An example of this, is the theme of the Adagio in Beethoven's C minor Symphony.

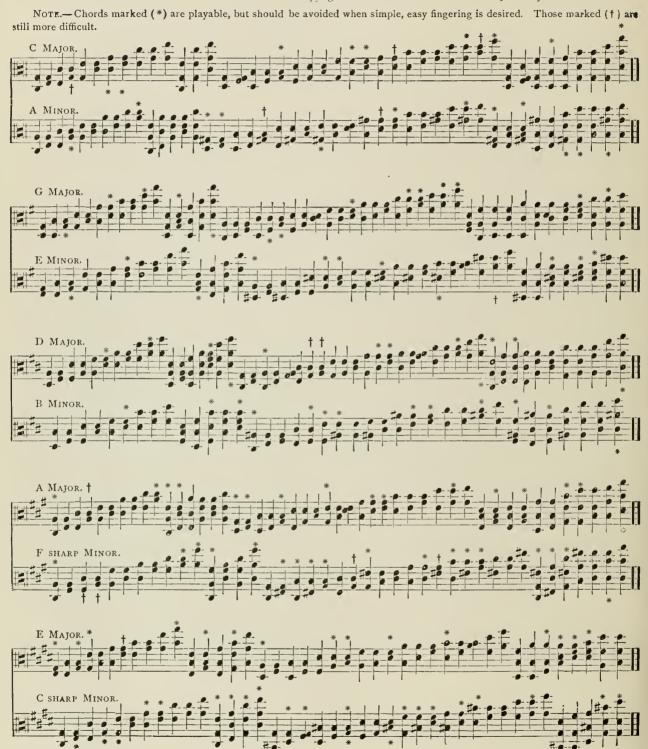
The following table has been prepared for the use of writers unfamiliar with the viola.

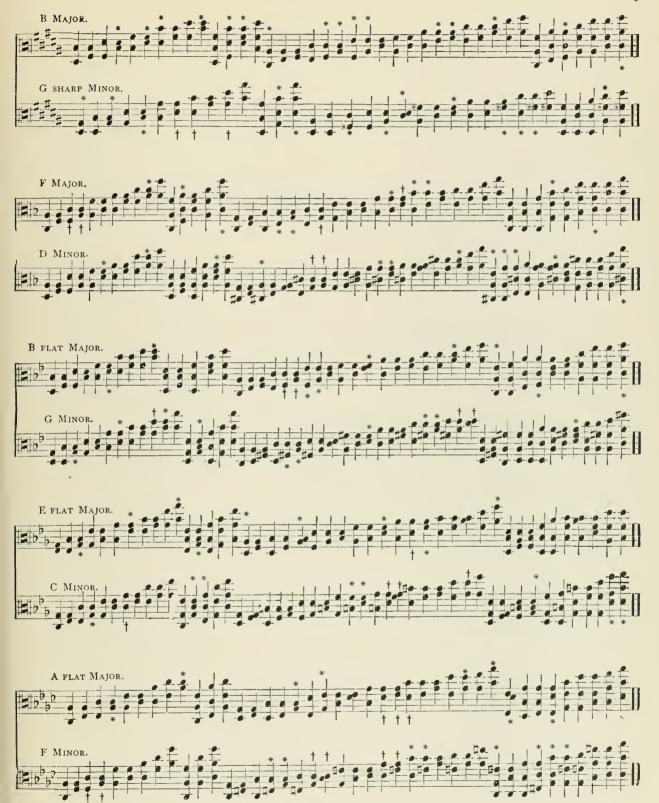
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TABLE OF CHORDS FOR THE VIOLA

In all the Major and Minor Keys. Copyrighted.

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THE VIOLE D'AMOUR.

This instrument is larger than the viola. It has almost universally fallen into disuse; and were it not for Mr. Urhan, of Paris, it would be known to us only by name.

It has seven catgut strings, the three lowest of which—like the C and G of the viola,—are covered with silver wire. Below the neck of the instrument, and passing beneath the bridge, are seven more strings, of metal, tuned in unison with the others, so as to vibrate sympathetically with them; thereby giving to the instrument a second resonance, full of sweetness and mystery. It was formerly tuned in several different whimsical ways; but Mr. Urhan has adopted the following mode of tuning in thirds and fourths, as the most simple, and the most rational:—



The compass of the viole d'amour is three octaves and a half, at least. It is written—like the viola,—on two clefs:—



Thus may be seen, by the disposal of its strings, that the viole d'amour is peculiarly appropriate to chords of three, four, or more notes, whether played arpeggio, or struck, or sustained; and above all, to melodies of double notes. Only, it is evident that, in designing harmonies for this instrument, a different plan must be pursued from that employed for violins, violas, and violoncellos, which are tuned by fifths; and that care must be taken to avoid the notes of chords beyond a third or fourth in general, unless the lower string be an open string. Thus, the A of the second octave gives every latitude to the high D, to extend its scale above itself:—



It is needless to observe that the chords of the minor third and the second—



are impracticable below; since the sounds that constitute them are necessarily on the D string. A moment's reflection shows similar impossibilities on the lowest string of all instruments played with a bow.

Harmonics have an admirable effect on the viole d'amour. They are obtained precisely in the same way as those of the violin and viola; excepting that its seven open strings being disposed as a common chord, give the viole d'amour great facility in producing with

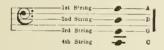
rapidity the arpeggios of its chord of D major, in the octave and double octave above.

It will be seen that if it be proposed to use these charming arpeggios of the viole d'amour, the keys of D, G, A, F#, or B#, are those which will best allow of so doing. The extreme charm of these arpeggio harmonics on the open strings, quite deserve that every pains should be taken to render them available.

The quality of the viole d'amour is faint and sweet; there is something seraphic in it—partaking at once of the viola, and of the harmonics of the violin. It is peculiarly suitable to the legato style, to dreamy melodies, and to the expression of ecstatic or religious feelings.

THE VIOLONCELLO.

Its four strings are tuned in fifths, and precisely an octave lower than the four strings of the viola;—



Its compass may be, even in the orchestra, three octaves and a half;—from low C, with the Chromatic Intervals, to G.



Great performers go still higher; but, in general, these extreme upper notes—which have no beauty excepting in the conclusion of slow passages—are seldom given in natural sounds; they are mostly taken in harmonics, which are produced more easily, and are of better quality.

It may not be amiss, before going farther, to premonish the reader of the double sense given to the G clef in violoncello music. When it is written from the commencement of a piece, or immediately after the F clef, it presents to the eye the octave above the real sounds.

It has its full value only when succeeding the C clef (on the fourth line); in which case it represents the real sounds, and not their octave above:—



This custom, which there is nothing to justify, leads to errors the more frequent, from certain violon-cellists refusing to conform to it, and choosing to receive the G clef in its true acceptation. In order to avoid all misconception, it will be here employed only after the C clef; and when this would lead us too far beyond the stave, the G clef shall always represent the real sounds, as in the preceding example.

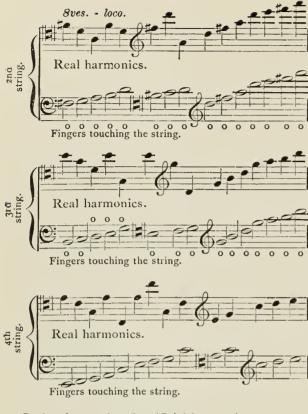
That which has been said respecting double strings, arpeggios, shakes, and the bowing of the violin, applies equally to the violoncello. It should, however, never be lost sight of, that the violoncello strings, being longer than those of the violin, demand a wider extension of the fingers of the left hand; whence it follows that passages of tenths on a double string, practicable on the violin and viola, are not so on the violoncello; and that an isolated tenth cannot be struck, unless the lower note is on an open string.



The following tenths would be impossible:—

The violoncello, on account of the depth of its quality and the thickness of its strings, is not susceptible of the extreme agility belonging to the violin and viola. As to the natural and artificial harmonics—of which frequent use is made on the violoncello in solo passages,—they are obtained by the same means as those of the violin and viola. The length of its strings even contributes to render the extreme upper notes in harmonics, which are produced near the bridge, much more easy and more beautiful than those of the violin. Here is a table of those which are best obtained from each string:—





Scale of natural and artificial harmonics;—





Harmonies in harmonics on the violoncello would doubtless have a charming effect in the orchestra, where the piece was soft and slow; nevertheless, it is easier, and consequently less hazardous, to obtain the same result by means of divided violins playing high on the first string with sordines. These two qualities of tone resemble each other so closely as to be almost undistinguishable.

To violoncellos in the orchestra, is ordinarily given the part of the double-bass; which they double, an octave above or in unison; but there are many instances when it is advisable to separate them, either to let them play on the high strings, a melody or melodious phrase; or to take advantage of their peculiar sonorousness on an open string, for producing a specific harmonial effect, by writing their part below the double-basses, or, lastly, to assign them a part nearly like that of the double basses, but giving them more rapid notes, which the latter could not well execute.

The composer should never, without an excellent reason, entirely separate the violoncellos and double-basses. The bass part, thus forsaken by the violoncellos, becomes dull, bald, extremely heavy, and ill-connected with the upper parts. When it is required to produce a very soft harmony of stringed instruments, it is, on the contrary, often well to give the bass to the violoncellos, omitting the double-basses.

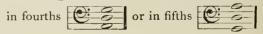
Violoncellos together, to the amount of eight or ten, are essentially melodious; their quality, on the upper strings, is one of the most expressive in the orchestra. Nothing is more voluptuously melancholy, or more suited to the utterance of tender, languishing themes, than a mass of violoncellos playing in unison upon their first string. They are also excellent for airs of a religous character; when the composer ought to select the strings upon which the phrase should be executed. The two lower strings, C and G, especially in keys which permit the use of them as open strings, are of a smooth and deep sonorousness, perfectly appropriate in such a case; but their depth itself scarcely ever permits of giving them any other than basses more or less melodious,—the actual airs being reserved for the upper strings.

The *tremolo* in *double string*, and *arpeggios* in *forte*, suit violoncellos perfectly; they add greatly to the richness of the harmony, and augment the general sonorousness of the orchestra.

The *pizzicato* of the violoncello cannot have much rapidity, and the means proposed for improving the execution of that of violins, cannot avail in this case, owing to the thickness and tension of the strings, and to their too great elevation above the finger-board of the instrument. According to the procedure generally in use, players seldom exceed, in pizzicato, the rapidity of *eight quavers* in a bar in two-time (Allegro non troppo), or that of *twelve semiquavers*, arpeggio, in a § bar (Andantino).

DOUBLE-BASSES.

There are two kinds; those with three, and those with four strings. Those with three strings are tuned



Those with four are tuned in fourths:-



The sound of both is an octave lower than the notes written. Their compass in the orchestra is two octaves and a quarter: allowing, for three-stringed double-basses, two or three notes, as it is tuned less below.



To double-basses belong, in the orchestra, the lowest sounds of the harmony. It has been stated, upon what occasion they may be separated from the violoncellos; and then may be palliated, to a certain degree, the defect which arises for the basses out of this disposal, by doubling them in octave, or in unison with the bassoons, the corni di bassetto, the bass clarinets, or the ordinary clarinets, in the extreme lower notes. There are cases where the natural harmonics of the double-basses may be successfully introduced. They are the same, in the octave below, as those of violoncellos. Strictly speaking, chords and arpeggios may be used on the double-bass; but it must be by giving them two or three notes at the utmost, of which one only need not be open.

The *intermittent tremolo* may easily be obtained, thanks to the elasticity of the bow, which causes it to rebound several times on the strings, when a single blow is somewhat sharply struck.



The continuous tremolo of double-basses, rather less close than this last, is nevertheless of excellent dramatic effect; and nothing gives a more menacing aspect to the orchestra; but it should not last too long, otherwise the fatigue it occasions the performers who are willing to take the trouble of doing it well, would soon render it impossible. When a long passage renders it needful thus to disturb the depths of an orchestra, the best way is, by dividing the double-basses not to give them a real tremolo, but merely

quick repercussions, mutually disagreeing as rhythmical values, while the violoncellos execute the true tremolo.

Rapid diatonic groups of four or five notes have frequently an admirable effect, and are readily executed, provided the passage contain at least one open string.

If a long rapid passage be absolutely necessary, divide them, and apply the dispersing process recommended for violins.

Composers are so injudicious, now-a-days, as to write passages of such rapidity, that violoncellos themselves would find difficulty in executing them, whence results a horrible disorder and confusion. They should therefore be careful to ask of double-basses no more than possible things; of which the good execution shall not remain doubtful.

Flights of little notes, before larger ones; —



are executed by sliding rapidly on the string, without paying attention to the precision of any of the intermediate sounds; and have an extremely good effect.

Beethoven, also, has availed himself of these scarcely articulate notes; but (contrary to the previous example), by accenting the first note of the group more than the last. (The passage of the Storm in the Pastoral Symphony.)

Sometimes it has a fine and dramatic effect, to give the violoncellos the real bass, or, at least, the notes which determine the chords, and strike the accented parts of the bar: while beneath them, the double-bass has an isolated part, the design of which, interrupted by rests, allows the harmony to rest upon the violoncellos.

The *pizzicato* of double-basses, either loud or soft, is good, unless it be employed on very high sounds: but it changes character, according to the harmonies beneath which it occurs. Thus, the famous pizzicato A, in the overture to *Freyschutz*, is big with threats and infernal accents, only because of the reflex of the chord of the diminished seventh, (F#, A, C, BÞ,) the first inversion of which it resolves on the unaccented part of the bar. Let it become the major tonic, or dominant, produced mezzo-forte, as in the case in question, and this A would no longer have anything strange in its effect. Sordines are employed on double-basses, as on other instruments played with a bow; but the effect they produce is little marked.

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STRINGED INSTRUMENTS PLAYED WITH THE HAND.

THE HARP.

This instrument is essentially anti-chromatic: that is to say, successions by half-tones are almost interdicted for it. The reason of this will be presently stated. Its compass was formerly but five octaves and a sixth.



The natural scale belongs to the key of E^{\flat} ; and in this key it was, that all harps were tuned; when the skiltul manufacturer, Erard, invented the mechanism which obviated them, and proposed tuning the harp in CD; which has been adopted by all harp players of the present day. The chromatic intervals can be obtained on the ancient harp only by means of seven pedals, put in motion by the player, and fixed one after the other with the foot, each of which heightens by half a tone, the note to which its mechanism applies, but throughout the extent of the scale, and not singly. Hence every chromatic scale (unless in an excessively slow movement), every progression of chords proceeding chromatically, or belonging to different keys, the majority of florid passages containing appoggiaturas with accidentals, or small chromatic notes, are all impracticable. There are even on the harp in Eb, four chords of seventh major, and four chords of ninth major, totally impossible to play. These are: -



It is, in fact, evident that every chord in which CP, is to be heard simultaneously with B^{\dagger} , cannot be possible. The same is the case with the DP, which results from raising the CD; and with the GP, produced by the raising of the F. The mechanism of the pedals of the harp in EP, only serving to restore the three flattened notes (B, E, A) to their nature state, and to sharpen four other notes (F, C, G, D), it follows, that this harp can only be prepared in eight keys; namely EP, BP, F, C, G, D, A, E. The flattened keys are only produced in harmonics, and by taking and leaving quickly one or more pedals. In

A, for instance, the D, is only the harmonic of C; and the player should quit this C; pedal immediately he has taken it; otherwise, he will not be able to make the C; heard,—the major third of the key in which he is playing: and moreover, he must skip a string (D;) when ascending diatonically, which is so inconvenient, that the use of such scales may be considered impracticable:—

This inconvenience, and this difficulty become doubled in D^{\flat} and in G^{\flat} , — both, keys nearly inaccessible, except for certain chords. Again, the key of G^{\flat} , like that of C^{\flat} , presents another difficulty, — that of compelling the player to an actual transposition for some notes of his scale; since he must strike the F^{\sharp} string when the written note is G^{\flat} ; the B^{\sharp} string when the note is C^{\flat} ; and the C^{\sharp} string when the note is D^{\flat} . As for the key of C^{\flat} , it becomes less inaccessible, if written in its other form, — that of B^{\sharp} ; but all the pedals being taken, there still remains to be overcome in this scale (as in that of A^{\flat}) the difficulty of skipping a string, and quitting a pedal to retake it again, for the leading note (in harmonic) and the tonic, which occur upon the same string: —

It will be perceived that, for the execution of a chromatic scale of two octaves' extent like this:—



it is necessary to put in action five pedals, rapidly in succession, for the first octave only; and also that they must all be very promptly quitted, in order to replace in their primitive condition those notes which they raised, and which are to recur in the upper octave, to be again retaken as in the first octave. Such a scale therefore, even in a movement of moderate time, is impossible for any harp. If the object be a succession of chords belonging to different keys, the impossibility becomes still more evident; because, in that case several pedals will have to be taken at once and successively:—

Certain appoggiaturas and ornaments containing chromatic successions, may in fact be executed after a fashion: but the majority of these ornaments are scarcely practicable; and those which form the exceptions, produce a very indifferent effect, on account of

THE HARP. 269

the influence which the movement of the pedal taken and quitted at the same instant, exercises over the sonorousness of the string:—



The following example, on the contrary, and all those which, like it, contain several semitones in a short space, and in a quick movement, are next to impossible:—



It should now be stated, that the harp being played with two hands, is therefore written for upon two lines. The lower line usually has the F clef, and the upper one the G clef; according to the height of the bass notes, or the depth of the treble notes, the G clef or the F clef may also find themselves on the two lines at one end and the same time.

It will be seen that this disposal renders the inexecutable passages still more numerous for the harp in B[†]; since a passage that may be easy for the right hand, becomes impossible, if the left hand wish to strike certain notes of accompaniment which are altered by a pedal in the melody, while the harmony admits of them only in their ordinary condition:—



The chord marked with a cross cannot be played; since it contains an F \(\tau\), sharpened in the upper part. In such a case, therefore, the note which thus presents itself under a double aspect, must be suppressed in one or other of the parts. In the preceding example, it is better to mutilate the chord in the left hand, and leave out the F \(\tau\).

When a melody already played by other instruments is to be repeated on the harp, and contains chromatic passages either impossible or hazardous, it should be dexterously modified, by substituting for one or more of the altered notes, other notes comprised in the harmony.

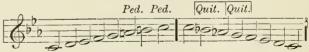
Struck with the important obstacles just cited, M. Erard invented *double-action* harps, which allows the harp — if not to play chromatic successions, — at least to play in all keys, and to strike or arpeggio all chords.

The double-action harp is tuned in C^{\flat} ; and its compass is six octaves and a quarter:—



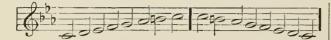
The seven pedals with which it is furnished are made so that the player may, by means of each of them, raise at option each string a tone, or a semitone only. By taking in succession the seven semitone pedals, the harp in C^{\flat} can therefore be set in G^{\flat} , in D^{\flat} , in A^{\flat} , in E^{\flat} , in B^{\flat} , in F, or in C^{\sharp} . In still farther raising each string another semitone, by means of the second action of the pedals, the seven notes of the natural scale will become sharpened; since the seven pedals produce F^{\sharp} , C^{\sharp} , G^{\sharp} , D^{\sharp} , A^{\sharp} , E^{\sharp} , and B^{\sharp} , which gives to the harp the power of playing in the keys of G, D, E, B, F^{\sharp} , and C^{\sharp} .

These, then, are all the keys accessible to the harp; only, the minor scales cannot be *set*, unless by treating them in ascending as in descending, without regarding the usage adopted with respect to the sixth and seventh notes; otherwise, two pedals must be taken and quitted:—



By adopting the interval of the augmented second between the sir's and seventh notes, the minor scale can be set and the accidental use of the pedals will not be necessary; which is a considerable advantage, and should suffice to make this scale preferred:—

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As for the chords interdicted to the harp in E?, it will be seen that the double action renders them possible.

If double-action harps have to be employed in an orchestral piece set for other instruments in B \sharp major, it would be greatly better for the sonorousness, and for the convenience of execution, to write them transposed into their key of C^{\flat} :—



Composers should have a care, in writing harp parts, to forewarn the player, a little in advance, of the change he will have to make, and of the pedal he will soon have to take, by these words placed a few bars before the occurrence of the modulation:—Prepare the G#, Prepare the key of C#, etc.

The nature of the instrument having been explained, we proceed now to the fingering; which many composers confound with that of the pianoforte, which it nowise resembles. With each hand, chords of four notes may be struck, of which the two extreme notes do not extend beyond an octave:—

Also, by a great stretch of the thumb and little finger, chords of a tenth may be reached.

But this position is less convenient, less natural, and therefore less sonorous; since none of the fingers can attack the string with as much force as in the ordinary position. Chords, which lie in the extreme lower part of the instrument, produce confused harmonies and should be avoided. Such deep sounds are only fit for doubling a bass in the octave below.

The successive execution of the notes of a chord, either ascending or descending, is perfectly in the character of the harp. Generally speaking, they should not exceed an octave extent; particularly, if the movement be quick; otherwise, they would necessitate a change of position of extreme difficulty.



The note which exceeds the extent of an octave should never be written but for the termination of a phrase; as thus:—



Care should be taken, in general, not to write for the hands too near together; and to keep them separated by an octave or a sixth at least, otherwise they interfere with each other.

All successions which oblige the same fingers to skip from one string to another, can only be written for a movement in very moderate time.

When a rapid series of diatonic octaves is desired, they should generally be written for the two hands. This equally applies to series of sixths. They are always—as with scales in thirds—practicable for a single hand: but only in descending; the thumb then sliding from one to the other of the upper notes, while the lower notes are played by the three fingers.

As an exception to what has been said above respecting the distance between the parts, these same scales in thirds are practicable for two hands. Nevertheless, it is still better, either to write these series of thirds for two harps, by giving the higher part to one and the lower part to another; or, — if there be but one harp, and much sound is wished to be obtained, — by separating the parts an octave, and then to write series of tenths.

If the object be to let a rapid ascending or descending arpeggio be heard, which exceeds the extent of an octave, instead of writing it in two parts, it should be dispersed, by giving a fragment to one hand while the other changes its position; and so on, reciprocally.

If doubled in the octave, it would be impracticable, but possible in a slow movement.

The shake exists for the harp; but its effect is only tolerable on the high notes.

Iteration in two or four parts (very useful sometimes in the orchestra) may likewise be obtained, and more simply, by employing two or more harps, and by writing cross fires, which present no difficulty in the execution, and produce precisely the desired offect:—

Of all known qualities of tone, it is singular that the quality of horns, of trombones, and generally of brass instruments, mingles best with harps. The lower strings (exclusive of the soft and dull strings of the extreme depth), the sound of which is so veiled, so mysterious, and so fine, have scarcely ever been employed but for bass accompaniments of the left hand; and the more the pity. The fact is they have not thought to avail themselves of this especial quality in tone.

The strings of the last upper octave have a delicate crystalline sound, of freshness, which renders them fit for the expression of graceful fairy-like ideas, and for giving murmuring utterance to the sweetest secrets of smiling melodies.

The harmonics of the harp, — particularly of many harps in unison, — are still more magical. But nothing comes near the sonorousness of these mysterious notes, when united to chords from flutes, and clarinets playing in the medium.

The best, and almost the only, harmonics for the harp, are those obtained by touching with the lower and fleshy part of the palm of the hand the centre of the string, while playing with the thumb and two first fingers of the same hand; thus producing the high octave of the usual sound. Harmonics may be produced by both hands.

All the strings of the harp are not fit for harmonics: only the two last low octaves should be employed for this purpose.



In case the quickness of the composition and the character of the instrumentation demands a speedy transition of a harp part from one key into another, very remote from that which precedes it (from E7 into E2, for instance), it cannot be effected upon the same instrument. If the transition be not sudden, and that there be but one harp-player to be had, the composer must still let the performer have a sufficient number of rests to give him time to apply the requisite pedals for modulation.

THE GUITAR.

The guitar is an instrument suited for accompanying the voice, and for figuring in a few unnoisy compositions, as also for executing singly pieces more or less complicated in several parts, which possess a true charm when performed by really good players.

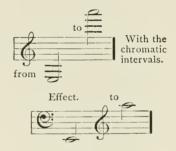
The guitar has six strings, tuned in fourths and thirds, thus:—



It is sometimes tuned in the following manner; especially for pieces written in the key of E:—



The guitar is a transposing instrument of three octaves and a fifth in compass; and written for with the G clef, an octave above the real sound:—



Major and minor shakes can be played throughout the extent of this scale.

It is almost impossible to write well for the guitar without being a player on the instrument.

The guitar being especially an instrument of harmony, it is very important to know the chords and likewise the arpeggios which it can execute.

Here is a certain number in different keys. We will commence by the easiest—those which are played without the use of Barrage (marked Barré).





The flat keys are incomparably more difficult than the preceding; and all require Barrage. The easiest chords are the following:—



In all chords, the employment of the first and the third of the lower strings without the second should be avoided.



It is impossible to strike these chords; but, by adding the second string to them, they become easy:—



Chords of the dominant seventh also should not be written in the usual position of three thirds above each other.

They are next to impossible.

The three following chords are easy, and link well together, in all keys:—

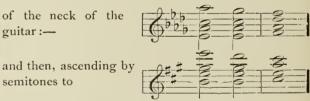


Likewise in F =, in G, in A b, etc.:-



Of course, these chords may sometimes have more than four notes, in keys which permit their having a low open string; in A‡, for instance, in E‡, in G, in F; in short, wherever one of these three notes may be introduced as the bass.

This succession, which requires Barrage of four strings, is equally practicable on the two lower thirds



which is the extreme point of height where this fingering can be employed.

The following arpeggios have an excellent effect on the guitar:—



Arpeggios from high to low are rather troublesome of execution, but quite feasible.

The same, reversed, are, on the contrary, very easy.

On account of the retrograde movement of the thumb on the two low notes, the following are much more difficult, and less advantageous:—



Scales bound by twos and twos, with the reiteration of a note, are elegant, and tolerably sonorous; particularly in the brilliant keys of the instrument.

Scales in thirds, although difficult in their two extremes, may be used in a moderately quick movement.

This applies equally to series of sixths and octaves.

Reiterated notes, two, three, four, and even six or eight times repeated, are easily done; prolonged reiterations (*roulements*) on the same note are rarely good excepting on the first string, or at the utmost on the three high strings.

Harmonics are well obtained on the guitar; and upon many occasions, felicitous use may be made of them. The best are those produced by touching the octave, the fifth, the fourth, and the third, major, of the open strings.

As was explained in the chapters on instruments played with a bow, the touched octave brings out this same octave.

The fifth touched produces the twelfth.

Touching the fifths after the six open strings.

The fourth touched produces the double octave.

Touching the fourths after six open strings.

The major third touched produces the seventeenth.

Touching the major third of the six open strings.

Touching the major third of the six open strings.

The minor third touched produces the nineteenth or octave above the twelfth.

Touching the minor thirds of the six open strings.

These latter harmonics are the least sonorous, and are obtained with difficulty.

On each string, moreover, chromatic and diatonic scales in artificial harmonics can be produced. In order to form an idea of what the best performers are able to produce in this way, the compositions of such celebrated guitar-players as Zanni de Ferranti, Huerta, Sor, etc., should be studied.

Its feeble amount of sonorousness does not admit of its being united with other instruments, or with many voices possessed but of ordinary brilliancy.

THE MANDOLIN.

There are several kinds of mandolins; the best known has four double strings; that is to say, four times two strings in unison, and tuned in fifths, like the violin.

It is written on the G clef:-



The compass of the mandolin is about three octaves:—



It is an instrument more for melody than for harmony; its strings being put in vibration with a quill or plectrum, certainly may allow chords of four notes to be heard, such as these—



obtained by passing the quill rapidly over the four double notes; but the effect of these groups of simultaneous notes is rather poor, and the mandolin has its real character and effect only in such melodious arpeggio accompaniments as the one written by Mozart in the second act of *Don Giovanni*.

STRINGED INSTRUMENTS WITH KEYS.

THE PIANOFORTE.

The pianoforte is an instrument with a key-board and metallic strings, put in vibration by hammers. Its present compass is seven octaves and one third. It is written on two different clefs at once: the F clef to the left hand; and the G clef, to the right hand. Sometimes, also,—according to the degree of height or depth of the passages assigned to the two hands, clefs are interchanged.



The shake is practicable on all the notes of the scale. The player may strike or arpeggio in any way, and with both hands, a chord of four or even five notes; but, at the same time, they should be written as close as possible.

Chords struck, embracing an interval of a tenth, are possible however; but by omitting the third, and even the octave, for greater facility.

Four, and even five real parts may be written for the pianoforte, by taking care not to place between the extreme parts of each hand, a distance greater than an octave or a ninth at most; unless indeed the pedal which raises the dampers be used, which, by prolonging the sounds without the player's finger remaining on the key-board, allows of augmenting the distance between the parts.

This sign * indicates quitting the pedal. It is mostly used when the harmony changes, in order to prevent the vibration of the notes of the last chord from continuing on to the following chord.

The hands are sometimes made to cross—either in obliging the right hand to pass over the left, or in causing the left to pass over the right.

It is only by studying the compositions of the great performers—those of Liszt especially,—that a just idea can be formed of the excellence to which the art of piano-forte playing has now-a-days attained.

For the pianoforte, as for the harp, it is better in certain cases—in arpeggios, for example—not to bring the hands too near each other.

Diatonic and chromatic scales in thirds, for both hands, are, however, easy.

Ophicleide in C .

These same scales, in two parts, are practicable by one hand alone; although difficult, in a quick movement. Moreover, in keys where there are few sharps and flats, the two hands may be written for, in series of sixth-thirds in three parts.

Besides, the pianoforte at the point of perfection to which our skillful manufacturers have brought it now-a-days, may be considered in a double point of veiw: as an orchestral instrument, or as forming a complete small orchestra in itself.

Whenever the pianoforte is made to go beyond soft effects, and attempt a forcible competition with the orchestra, it vanishes entirely. It should accompany, or be accompanied.

Considered as a small orchestra in itself, the pianoforte should have its own appropriate instrumentation. It evidently has one; and this art forms a portion of the pianist's.

WIND INSTRUMENTS.

Before studying individually each member of this large family, we will fix as clearly as possible the musical vocabulary indicating the different degrees of height or depth of certain instruments, the transpositions to which these differences lead, the established mode of writing for them, and the denominations which have been applied to them.

We will first establish a line of demarcation between those instruments of which the sound is produced as indicated by the musical signs, and those of which the sound issues above or below the written note. From this classification the following lists result:—

All Ophicleides excepting that in C

TABLE.

	MON-TRANSPOSING INSTRUMENTS:									TRANSPOSING INSTRUMENTS.		
	FROM WHICH THE SOUND ISSUES AS IT IS WRITTEN.							ΓEN.		OF WHICH THE SOUND IS DIFFERENT FROM THE WRITTEN NOTES		
l 'he	Violin.											
	Viola.											
	Viole d'amour.											
	Violoncello					•	•			The Double-Bass.		
	Usual Flute									All other Flutes than the usual one.		
	Hautboy	٠								The Corno Inglese.		
	Clarinet in C		•							All Clarinets excepting the Clarinet in C.		
	Bassoon				•				•	(Basson-quinte.		
	Russian Bassoon.									Double Bassoon.		
	Horn in high C .		•					•		All Horns excepting the Horn in high C.		
	Cornet à Piston in C						•		·	All Cornets à Piston excepting that in C.		
	Trumpet in C .				•			Ĭ		All Trumpets excepting the Trumpet in C.		
	Alto Trombone	•	•	•	•	•	•	•	•	The Trumpets excepting the Trumpet in G		
	Tenor Trombone Bass Trombone	•	•	•	•	•	٠	•	٠	Alto Trombones with Valves.		

				TRANSFORM INSTRUMENTS
Bombardon			•	The Serpent.
Bass-Tuba.				
Harp				The Guitar.
Pianoforte.				
Organ.				
Voices { when written or all equally on the	n their respectiv	e clefs; and no	ot }	Tenors and { when written on the G clef; their sounds then Basses. { issuing an octave below the written note. }
Kettle-Drums.				
Bells.				
Ancient Cymbals.				
Sets of Bells.				
Glockenspiel		0 • •	•	Keyed Instrument with steel bars.
Keved Harmonica.				·

It will be seen by this table that if all the non-transposing instruments said to be in C, emit their sounds as they are written, those like the violin, hautboy, and flute, which have no designation of key, are in the same condition. They are therefore, in the composer's eye, similar to instruments in C. Now, the denomination of some wind instruments, based on the natural sound of their tube, has led to the most singular and most absurd consequences: it has caused the art of writing for transposing instruments to become a very complicated task, rendering the musical vocabulary perfectly illogical. It is therefore high time to revert to this habit, and to establish some kind of order where we find so little existing.

MON-TRANSPOSING INSTRUMENTS

Performers sometimes say—speaking of the tenor trombone—the trombone in B^{\flat} ; in speaking of the alto trombone, the trombone in E^{\flat} ; and still more frequently, in speaking of the usual flute, the flute in D.

These designations are so far correct, but as performers pay no regard to this resonance of the tube, as they produce really the written notes, it evidently follows that these instruments are not, or are no longer in the list of transposing instruments; that they consequently belong to that of the non-transposing instruments; and that they are supposed to be in C, like hautboys, clarinets, horns, cornets and trumpets in C; while no designation of key should be applied to them, or else give them that of C. This established, it will be seen of what importance it is, not to call the usual flute, flute in D; the other flutes, higher than this one, having been designated according to the difference existing between their pitch and that of the usual flute, it has become the fashion - instead of saying simply, tierce flute, ninth flute, which at least offers no confusion in the terms — to call these instruments, flute in F, flute in E. And to what does this lead? In a score, the small clarinet in Ep, of which the C really makes Ep, can execute the same part as a third flute, so-called in F; and these two instruments, bearing the names of different keys, are nevertheless in unison. The denomination of one or other must be false; and it is absurd to adopt solely for flutes a mode of appellation and of designation of keys, different from that in use for all other instruments.

TO ANCHORING INSTRUMENTS

Hence the principle which I propose, and which renders impossible all misunderstanding: the key of C is the point of comparison which should be taken to specify the keys of transposing instruments. The natural sound of the tube of non-transposing wind instruments can never be taken into consideration.

All transposing instruments, or only transposing in the octave — of which consequently the written C gives C — are considered as being in C.

Accordingly, if an instrument of the same kind is tuned above or below the pitch of the typical instrument, this difference will be designated consonantly with the analogy which exists between it and the key of C. Consequently, the violin, the flute, and the hautboy, which play in unison with the clarinet in C, the trumpet in C, the horn in C, are in C; and if a violin, a flute, or a hautboy be employed, tuned a tone higher than the usual instruments of this name, this violin, this flute, this hautboy, then playing in unison with clarinets in D, and trumpets in D, are in D.

Whence I conclude, that, for flutes, the old mode of designating them should be abolished: that the tierce flute should no longer be called flute in F; but flute in E \flat , since its C makes E \flat : nor ninth flutes and minor second flutes, flutes in E \flat ; but large or small flute in D \flat , since their C makes D \flat . and so on, with all the other keys.

REED INSTRUMENTS.

The family of double reed instruments should be distinguished from that of single reed instruments. The former is composed of five individuals:—the hautboy, the corno inglese, the bassoon, the bassoon-quinte, and the double-bassoon.

THE HAUTBOY OR OBOE.

Its compass is two octaves and a sixth. It is written on the G clef:—



The two last high notes should be used with much reserve: the F particularly is hazardous, when it presents itself abruptly. Some hautboys have the

low Bb, ; but this note not being generally

acquired on the instrument, it is better avoided.

The shakes formed of these different intervals, and of some others also, are therefore impossible, or excessively difficult, and producing a bad effect, as will be seen by the following table:—



Hautboys (Oboi) are much more at their ease in keys where there are few sharps or flats. They should hardly be made to play out of this limit:—



The sounds that exceed it, either below or above, being weak or thin, hard or shrill; and of bad quality. Rapid passages, chromatic or diatonic, can be tolerably well executed on the hautboy; but they only produce an ungraceful and almost ridiculous effect: and the same with arpeggios.

The hautboy is especially a melodia! instrument: it has a pastoral character, full of tenderness - nay, even of timidity. Candor, artless grace, soft joy, or the grief of a fragile being, suits the hautboy's accents; it expresses them admirably in its cantabile. A certain degree of agitation is also within its powers of expression; but care should be taken not to urge it into utterances of passion—the rash outburst of anger, threat, or heroism. Where - in order to give more weight and body to the harmony, and more force to the group of wind instruments employed — hautboys are absolutely needful. The lower sounds of the hautboys, ungraceful when displayed, may agree with certain wild and lamenting harmonies, united to the low notes of the clarinets, and to the low D, E, F, and G of the flutes and corni inglesi.

THE CORNO INGLESE.

This instrument is, so to speak, the alto of the hautboy, with which it possesses equal compass. It is written on the G clef, like a hautboy in F below; and, consequently, a fifth above its real sound.



Many corni inglesi possess also the low Bb.

If the orchestra play in C, the corno inglese ought to be written in G; if it play in D, the corno inglese should be written in A; etc.

What has just been said upon the difficulties of fingering for the hautboy, in certain encounters of sharpened or flattened notes, applies also to the corno inglese; rapid passages upon it have a still worse effect: its quality of tone, less piercing, more veiled, and deeper than that of the hautboy, does not so well as the latter lend itself to the gaiety of rustic strains. Nor could it give utterance to anguished complainings; accents of keen grief are almost interdicted to its powers. It is a melancholy, dreamy, and rather noble

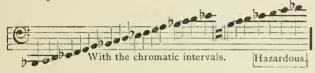
voice, of which the sonorousness has something of vague,— of remote,— which renders it superior to all others, in exciting regret, and reviving images and sentiments of the past, when the composer desires to awaken the secret echo of tender memories.

Feelings of absence, of forgetfulness, of sorrowful loneliness, which arise in the bosoms of the audience on hearing a forsaken melody, would lack half its power if played by any other instrument than a corno inglese.

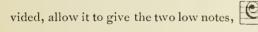
In compositions where the prevailing impression is that of melancholy, the frequent use of the corno inglese hidden in the midst of the great mass of instruments, is perfectly suited. Then, only one hautboy part need be written; replacing the second, by that of the corno inglese.

THE BASSOON.

The bassoon is the bass of the hautboy; it has a compass of more than three octaves; and it is written thus, upon two ciefs:—

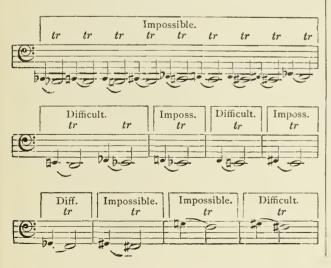


but it is more than prudent not to carry it above the last B . The keys with which it is now-a-days pro-



which formerly were interdicted to it. Its fingering is the same as that of the flute.

There are several shakes quite impossible for it, at the two extremes of the bassoon's scale.





All others above F # are bad or impossible.

The bassoon is of the greatest use in the orchestra on numerous occasions. Its sonorousness is not very great, and its quality of tone, absolutely devoid of brilliancy or nobleness, has a tendency towards the grotesque—which should always be kept in mind, when bringing it forward into prominence. Its low notes form excellent basses to the whole group of wooden wind instruments. The character of their high notes is somewhat painful, suffering—even, I would say, miserable,—which may be sometimes introduced into either a slow melody, or passages of accompaniment, with most surprising effect.

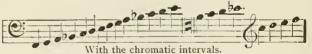
Rapid passages of bound notes may be successfully employed; they come out well when they are written in the favorite keys of the instrument, such as D, G, C, F, B \flat , E \flat , A, and their relative minors.

THE BASSON-QUINTE.

The basson-quinte is a diminutive of the preceding: and its pitch is a fifth higher. In has about the same compass; and, like it, is written upon two clefs,—but transposing:—



which produces in real sounds the following scale:-

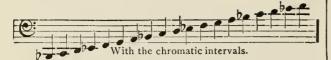


The basson-quinte is to the *high* bassoon what the corno inglese is to the *low* hautboy. The corno inglese should be written a fifth above the real sound, and the basson-quinte a fifth below; therefore, the basson-quinte will play in F when the bassoons play in C, and in G when they are in D, etc.

THE DOUBLE-BASSOON.

This instrument is to the bassoon, what the double-bass is to the violoncello. That is to say, its sound is an octave lower than the written note. It has seldom more than this compass:—

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which produces in real sounds:-



The two first notes of this scale come out with difficulty, and are very ineffective, on account of their extreme depth.

It is needless to add that this very ponderous instrument is only suitable for grand effects of harmony, and to basses of a moderate degree of speed.

CLARINETS.

Simple reed instruments, such as the clarinet, and the corno di bassetto, form a family, whose connection with that of the hautboy, is not so near as might be thought. That which distinguishes it especially, is the nature of its sound. The middle notes of the clarinet are more limpid, more full, more pure than those of double reed instruments. The high sounds of the last octave, commencing with the C above the stave, partake only a little of the tartness of the hautboy's loud sounds; while the character of the lower sounds approach, by the roughness of their vibrations, to that of certain notes on the bassoon.

The clarinet is written on the G clef; and its compass is three octaves and a half, or more:—

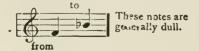


Four registers are reckoned on the clarinet:—the low, the chalumeau, the medium, and the high.

The first comprises this part of the scale:-



The second, this:



The third contains the following notes:-



And the fourth is found in the remainder of the scale up to the highest D.

The number of major and minor shakes practicable on the clarinet is considerable; those which are not to be played with surety, are



The favorite keys of the clarinet are the keys of C, F, G, principally; and then those of B^{\flat} , E^{\flat} , A^{\flat} , D^{\ddagger} major, and their relative minors. As there exist clarinets in different keys, by their means may be avoided causing the performer to play in keys containing many sharps and flats; as A^{\ddagger} , E^{\ddagger} , B^{\ddagger} , D^{\flat} , G^{\flat} major, and their relative minors.

There are four clarinets in general use at present?

The small clarinet in E^{\flat} ; to which it is not well to give a compass beyond three octaves and two notes:—



It is in the minor third above that of the clarinet in C; and is written by transposing. The clarinet in C, and the clarinets in B; and in A. These two latter have a compass equal to the clarinet in C; but the one sounding a major second and the other a minor third lower, their parts should be written in keys so much higher.

Clarinets have proportionally less purity, sweetness, and clearness, as their key is more and more removed above that of Bb, which is one of the finest on the instrument. The clarinet in C is harder than that in Bb, and its voice has much less charm. The small clarinet in Eb has piercing tones, which it is very easy to render mean, beginning from the A above the stave.

In general, performers should use only those instruments indicated by the author. Each of these instruments having a particular character, it is at least probable that the composer has chosen one rather than the other, from preference for such and such a quality of tone, and not from caprice. To persist,—as some performers do—in playing (by transposing) on the clarinet in Bb, is, therefore, with some few exceptions, a faithlessness of execution.

It has been said that the clarinet has four registers; each of these registers has also a distinct quality of tone. That of the high register is somewhat tearing. Those of the chalumeau and medium resisters are suited to melodies, to arpeggios, and to smooth passages; and the low register is appropriate—particularly in the holding notes—to those coldly threatening effects, those dark accents of motionless rage, which Weber so ingeniously invented.

The character of the sounds of the medium register render them favorable for the expression of sentiments and ideas the most poetic. A frivolous gaiety, and even an artless joy, seem alone unsuited to them. The clarinet is little appropriate to the *Idyl*; it is an *epic* instrument, like horns, trumpets, and trombones. Its voice is that of heroic love.

This beautiful soprano instrument, so ringing, so rich in penetrating accents, when employed in masses,—gains as a solo, in delicacy, evanescent

shadowings, and mysterious tenderness, what it loses in force and powerful brilliancy.

It is the one of all the wind instruments, which can best breath forth, swell, diminish, and die away its sound. Thence the precious faculty of producing distance, echo, an echo of echo, and a twilight sound.

THE ALTO CLARINET

Is no other than a clarinet in F (low) or in E[†] (low), and consequently at a fifth below the clarinets in C or in B[†], of which it has the whole compass. It is written, therefore, in transposing, either a fifth, or a sixth major above the real sound.



It is a very beautiful instrument, that one regrets not to find in all well-constituted orchestras.

THE BASS CLARINET,

Lower still than the preceding, is an octave below the clarinet in Bb; there is another in C, however (an octave below the clarinet in C); but that in Bb is much more usual. As it is always the same instrument,—constructed on larger dimensions,—as the ordinary clarinet, its compass remains much the same. Its reed is a little weaker and more covered than that of the other clarinets. The bass clarinet is evidently not destined to replace in the upper notes the high clarinets; but, certainly, to extend their compass below. Nevertheless, very beautiful effects result from doubling, in the octave below, the high notes of the Bb clarinet, by a bass clarinet. It is written, like other clarinets, on the G clef:—



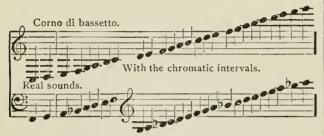
Impossible.

The best notes are the lowest ones; but, owing to the slowness of the vibrations, they should not be made to follow each other too rapidly.

According to the manner of writing it, and the talent of the performer, this instrument may borrow that wild quality of tone which distinguishes the bass notes of the ordinary clarinet, or that calm, solemn, and sacerdotal accent belonging to certain registers of the organ.

THE CORNO DI BASSETTO

Would not otherwise differ from the alto clarinet in F (low) than by the little brass bell mouth which elongates its lower extremity, were it not that it has besides the faculty of descending chromatically as far as the C a third below the lowest note of the clarinet:—



The notes which extend above this compass are very hazardous; nor is there any plausible reason for employing them, since there are high clarinets which yield them without difficulty, and with much more purity.

Like those of the bass-clarinet, the low notes of the corno di bassetto are the finest and the most marked in character.

WIND INSTRUMENTS WITHOUT REEDS.

THE FLUTE.

The flute, very $f \in W$ years ago, had only the following compass:—



There have been successively added to this scale two semitones below, and three above, which gives three complete octaves:—



However, as all performers have not the C key, it is better, in the majority of cases, to abstain from these two high notes in writing for the orchestra. The two last high sounds, Bt, C, should not either be employed pianissimo, on account of a certain difficulty which attends their emission, and their rather harsh sound. The high Bb, on the contrary, comes out without trouble; and may be sustained as piano as desired, without the least danger. The number of notes on which shakes may be made, were rather restricted in the old flute; but, thanks to the keys added to the modern one, the major and minor shake is practicable upon a large portion of its chromatic scale:—

Difficult.

Impossible.

Difficult.

Impossible.



With the flutes constructed upon Boëhm's method, shakes are practicable on the notes of the very extreme upper part of the scale; and from the Db below up to the highest C; moreover, they are incomparably more true of intonation.

Impossible.

The flute is the most agile of all the wind instruments; it is equally suited to rapid passages (diatonic or chromatic) slurred or detached, to arpeggios, and even to very extended passages.

Also, to iterated notes, like those played staccate on the violin; which are obtained by double-tonguing.

The keys of D, G, C, F, A, Et, Bb, Eb, and their relative minors, are the favorite keys of the ordinary flute; the others are greatly more difficult. A flute of Boëhm's, on the contrary, can be played in Db, almost as easily as in D.

The sound of this instrument is sweet in the medium, rather piercing in the high notes, and very characteristic in the low ones. The quality of tone of the medium, and that of the high portion, has not a very special or decided expression. They may be employed in melodies, or accents of varied character. It should seem then, that the flute is an instrument well-nigh devoid of expression, which may be introduced anywhere and everywhere, on account of its facility in executing groups of rapid notes, and in sustaining high sounds useful in the orchestra for adding fulness to the upper harmonies. Generally speaking, this is true; nevertheless, on studying the instrument carefully, there may be discovered an expression peculiar to it, and an aptitude for rendering certain sentiments, in which no other instrument can compete with it. If, for instance, it were requisite to give to a sad air, an accent of desolation, but of humility and resignation at the same time, the feeble sounds of the flute's medium, in the keys of C minor and D minor especially, would certainly produce the desired effect.

An effect remarkable for its sweetness, is that of two flutes playing in the medium successions of thirds in $E\flat$ or in $A\flat$ —both keys extremely favorable to the velvet sounds of this instrument.

The low sounds of the flute are seldom, or else ill employed by the majority of composers. Weber, in numerous passages of the *Freyschutz*, and, before him, Gluck, in the religious march in *Alceste*, have nevertheless shown what may be done with it in harmonies imbued with seriousness and thought. These bass notes,—as I have already said,—mingle admirably with the low sounds of corni inglesi and clarinets; they give the softened shade of a dark coloring.

In general, the modern masters keep their flutes too constantly in the high range. Hence, it results that they predominate, instead of blending with the whole.

Flutes form a family of themselves—like hautboys and clarinets; and are quite as numerous. The large flute—of which mention has just been made—is the most used. A charming sonorousness is obtained from the association of a single flute above, with four violins, sustaining a high harmony in five parts. Notwithstanding the prevailing custom,—for which there is reason, however—which always gives to the first

flute the highest notes of the harmony, there are many occasions, in which a contrary plan might be pursued with success.

THE PICCOLO FLUTE.

It is an octave higher than the preceding:—



It has the same compass, always excepting the double high C, which comes out with great difficulty, and with a sound almost insufferable; so that it should never be written. The high B‡, is already of exceeding hardness, and can only be employed in a fortissimo of the whole orchestra.

Piccolo flutes are strangely abused now-a-days—as is the case with all instruments whose vibrations thrill, pierce, or flash forth. In pieces of a joyous character, the sounds of the second octave, from



may be very suitable, in all their gradations; while the upper notes,—



are excellent (fortissimo) for violent and tearing effects: in a storm, for instance, or in a scene of fierce or infernal character.

. Every one has remarked the diabolic sneer of the two piccolo flutes in thirds, in the drinking song of the *Freyschutz*. It is one of Weber's happiest orchestral inventions:—



When this instrument is employed in doubling in triple octave the air of a baritone, or casting its squeaking voice into the midst of a religious harmony, or strengthening and sharpening—for the sake of the

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noise only—the high part of the orchestra, I cannot help feeling this mode of instrumentation to be of a platitude and stupidity worthy, generally, of the musical style to which it belongs.

The piccolo flute may have a very happy effect in soft passages; and it is mere prejudice to think that it should only be played loud. Sometimes it serves to continue the high scale of the large flute.

In military music advantageous use is made of three other flutes, which might be made very serviceable in ordinary orchestras; these are:—

The tierce flute (said to be in F), of which the C makes Eb, is exactly a minor third above the ordinary flute—from which it differs only in that particular, and in its more crystalline quality of tone.

The minor ninth piccolo flute (said to be in E b), the C of which makes D b, is a semitone higher than the octave piccolo flute; and it should be similarly treated.

The tenth piccolo flute (said to be in F), of which the C makes $E \flat$; and which we call tenth piccolo flute in $E \flat$. It is an octave above the minor third flute, and a tenth above the ordinary flute.

It should not be made to go above the high A, and even this note is excessively piercing, and comes with difficulty.

This completes the low-compassed family of this instrument (which might be made, however, as numerous a family as that of the clarinets, if needful).

WIND INSTRUMENTS WITH KEY-BOARDS.

THE ORGAN*

is an instrument with a key-board and pipes of wood and of metal, made to vibrate by means of the wind sent through them from bellows.

The number, lesser or greater, of series of pipes of different kinds and different dimensions possessed by an organ, gives it a proportional variety of *stops*, by means of which the organist can change the quality of tone, the power of sound, and the compass of the instrument.

They call the *draw-stop* that mechanism by means of which the organist makes such and such a stop speak.

The compass of the instrument is indefinite; it varies with its dimension,— which is ordinarily designated by the number of feet length that its largest pipe

*[What is here said upon the organ refers to Continental organs and therefore applies but partially to the organ in this country.— Translator.]

measures, forming the lowest note of the key-board Thus, they say:—an organ of thirty-two feet, of sixteen, of eight, or of four feet.

An instrument which possesses, with the lowest stop—called open flute of thirty-two feet—an open flute of sixteen feet, an open flute of eight feet, a Prestent, or open flute of four feet, and the Principal which sounds the octave above the preceding, has the immense compass of eight octaves, with all the chromatic intervals.

A large organ generally possesses five key-boards, one above another.

There is a key-board placed in such a manner as to be put in action by the feet of the performer; and for this reason, it is called the pedal key-board. This is dedicated to the lowest notes of the organ. It has only the two octaves at the lower end, and often even lacks certain intervals.

The different stops imitate tolerably well in their quality of tone, those instruments whose names they bear.

The fingering of the organ is the same as that of the pianoforte, — with this difference — that the emission of the sounds being less instantaneous, such rapid successions cannot be executed as on the piano-forte; the mechanism of the key-board, moreover, obliging the organist to press his fingers more upon each key. This instrument possesses the power of sustaining the sounds as long as may be desired: it is therefore more suited than any other to the *bound* style; that is to say, to that in which the harmony makes the most frequent use of suspensions and prolongations, and of oblique movement. Music for the organ is sometimes written upon three lines; the two upper ones for the hands, and the under one for the pedal key-board.

The organ seems able—like the pianoforte, and even still better—to present itself in the instrumental hierarchy, under two aspects:—as an instrument belonging to the orchestra, or as being in itself a complete and independent orchestra. It is doubtless possible to blend the organ with the divers constituent elements of the orchestra; and it has even been many times done. Moreover, it should be felt that there seems to exist between these two musical powers a secret antipathy. Therefore, on almost all these occasions where this singular connection is attempted, either the organ much predominates over the orchestra, or the orchestra having been raised to an immoderate degree of influence, almost eclipses his adversary.

The soft stops of the organ seem alone suitable for accompanying the voice. As for determining the

THE HORN.

manner in which the organ should be individually treated - considered as a complete orchestra in itself — this is not the place for us to do so; but merely a careful study of what is the best mode of making it conduce to musical effect in its association. The knowledge of the organ, the art of choosing its different stops, of contrasting them one with the other, constitutes the talent of the organist,—supposing him to be, according to custom, an extempore player. In the contrary case, — that is to say, considered merely as a simple performer having to execute a written work, - he should scrupulously conform to the composer's instructions; who, accordingly, is bound to know the special resources of the instrument he writes for, and employ them judiciously. But these resources are so vast and so numerous, that the composer will never be well acquainted with them, - as it appears to me, - unless he be himself an accomplished organist.

Brass Instruments With Mouth-Pieces. THE HORN.

This instrument, possessing a large number of moveable crooks, which render its pitch more or less low, and more or less high, — its compass cannot be precisely stated, without at the same time knowing the kind of horn in question. It is, in fact, easier to produce high sounds than low sounds on horns of a low key; excepting however, the keys of A, Bb, and C (low), the extreme length of their tubes rendering the emission of high notes very difficult. It is easier, on the contrary, to give low notes than high notes, on horns whose keys are high. Moreover, certain horn-players, using a large mouth-piece, and being well-practised in giving low sounds, cannot bring forth the higher ones; while others, who use a narrow mouth-piece, and have accustomed themselves to give forth the high notes, cannot produce the lower ones.

There is then a particular compass for each key of the instrument, and likewise two other particular compasses belonging to performers who play the high part (that of the first horn), and the low part (that of the second horn).

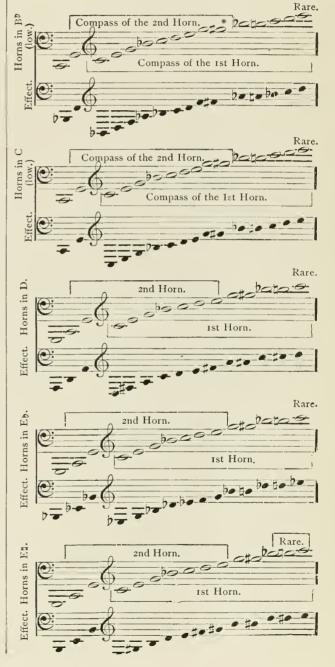
The horn is written on the G clef, and on the F clef; with this particularity established by custom, that the G clef is considered as being lower by an octave han it really is. The subjoined examples will make this understood.

All horns, with the exception of the horn in C above, are transposing instruments.

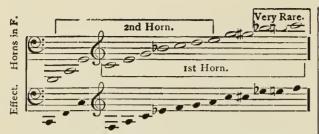
They have two kinds of sounds of very different character; open sounds, which are almost all the natural resonance of the harmonic divisions of the instrument's tube, and come out without other assist ance than that of the lips and breath of the player, and closed sounds, which are obtained by closing more or less the bell with the hand.

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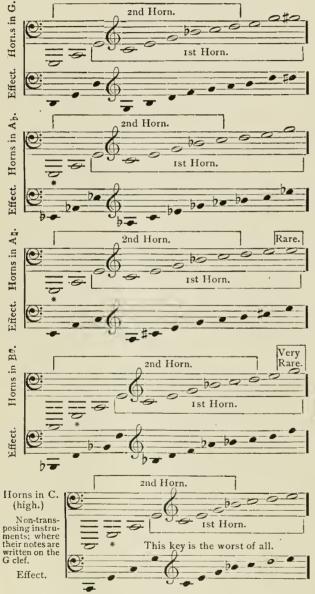
First, here is the table of *open* sounds on the different first and second horns:—



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The open G # cannot be so easily played as the G #; but it comes out very well if it be preceded by a neighboring note like G #, or F #, or A. It is a little too high.



*The double G below, marked with the sign * is easier in the higher keys; but is bad and uncertain in most other keys generally.

The family of horns is complete; there are horn in all keys, although it is generally thought otherwise. Those which appear to be wanting in the chromatic scale are obtained by means of a lengthened piece which lowers the instrument a semitone. Thus, we have, in fact, formed of all pieces, only horns in B \mathfrak{p} (low), in C, in D, in E \mathfrak{p} , in E \mathfrak{p} , in F, in G, in A \mathfrak{p} , in A \mathfrak{p} (high), in B \mathfrak{p} (high), and in C (high); but by adding lengthening pieces to the keys of B \mathfrak{p} and C (low), A \mathfrak{p} is obtained, and B \mathfrak{p} (low); and, by the same means, the key of D is transformed into D \mathfrak{p} (or C \mathfrak{p}), the key of G into G \mathfrak{p} (or F \mathfrak{p}), and the key of C (high) into B \mathfrak{p} (high) (or C \mathfrak{p}); this last key is obtained by merely drawing the slide of the horn in C (high).

By uniting the compass of the first horn with that of the second, and by making the factitious open notes, or closed notes, succeed the natural open notes,—this is the immense chromatic scale thence resulting,—ascending from low to high:—

GENERAL COMPASS OF THE HORN.



THE HORN. 286

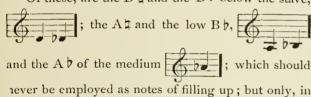


It is here the opportunity to point out that rapid successions are the more difficult on the horn, according as its key is lower; it is, moreover, a general law, which should be observed in all instruments—that, since the low sounds are those which result from specified numbers of slow vibrations, so, the sonorous body should have the requisite time for the production of sound.

Care should be taken, as much as possible, in employing closed sounds, particularly in the orchestra, to intersperse them with open sounds; and not to skip from one closed note to another; or, at least, from a bad closed note to another equally bad.

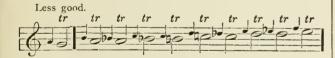
When closed sounds are not written for a particular effect, those at least should be avoided, the sonorousness of which is too weak and too dissimilar to the other sounds of the horn.

Of these, are the D \(\mathbb{1} \) and the D \(\mathbb{b} \) below the stave,



order to produce effects inherent from their deil, noarse, and wild quality of tone.

Major and minor shakes are practicable on the horn; but in a small portion of the scale only. These are the best.



Horns are generally written — whatever may be their key, and that of the orchestra — without sharps or flats at the clef. When the horn is treated as a reciting part, however, it is better, if the instrument be not in the same key as the orchestra, to indicate at the clef the sharps or flats required by the key; but it should always be so managed, that very few are employed.

The horn is a noble and melancholy instrument; the expression of its quality of tone, and of its sonorousness, are, nevertheless, not those which unfit it for figuring in any kind of piece. It blends easily with the general harmony; and the composer—even the least skilful—may, if he choose, either make it play an important part, or a useful but subordinate one.

THE HORN WITH THREE PISTONS; AND THE HORN WITH VALVES.

This instrument can make all its notes open notes, by means of a mechanism of which the action consists in changing instantaneously the key of the horn. Thus the use of such and such a piston, transforms the F horn into an E horn; or an E b horn into a D horn, etc.; whence it follows that the open notes of one key becoming added to those of other keys, the complete chromatic scale is obtained in open sounds. The use of the three pistons has moreover the effect of adding to the scale of the instrument six semitones below its

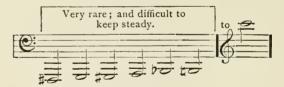
lowest natural sound. Thus, in taking this C,

as the extreme point of the compass of the horn below, the pistons give it the following notes in addition:—



It is the same with all the brass instruments,—trumpets, cornets, bugles, and trombones,—to which the mechanism of the pistons is applied.

The compass of the horn with three pistons, in a mixed key like the key of E b would therefore be this:-



This system especially offers advantages for the second horns, owing to the considerable lapses which it fills up between its natural low notes, commencing

from the last low C ascending, [C]; but

the quality of tone of the horn with pistons differs a little from that of the ordinary horn, —which it cannot therefore entirely replace. I think it should be treated almost like an instrument apart,—particularly fitted for giving good basses, vibrant and energetic; not possessing, however, so much force as the low sounds of the tenor trombone, to which its own bear much resemblance. It can also render a melody well, especially if it lies principally on the medium notes.

The best keys to use for the horn with pistons—the only ones indeed which leave nothing to desire on the score of correctness in tune—are the intermediate keys. Thus, the horns in E \(\pi\), F, G, and A \(\frac{1}{2}\), are much preferable to the others.

THE TRUMPET.

Its compass is nearly the same as that of the horn, of which it possesses (in the upper octave) all the natural open notes; it is written on the G clef:—



It is well to avoid the employment of the low C, on trumpets lower than the trumpet in F.

There are trumpets formed of all kinds, in $B \, \flat$, in C, in D, in $E \, \flat$, in $E \, \sharp$, in F, and in G; very rarely in high $A \, \flat$. By means of the lengthening piece, of which mention was made in speaking of horns, and which lowers the instrument a half tone, trumpets are produced in A, in $B \, \sharp$, in $D \, \flat$ (or $C \, \sharp$), in $G \, \flat$ (or $F \, \sharp$).

The low trumpets — like all other instruments of this kind — should avoid the lowest note; while the high trumpets cannot reach the most acute sounds.

The shake is hardly practicable in general on the trumpet; and I think it should be abstained from in the orchestra.

What I have said with regard to different keys on the horn, and of the way of using them by means of interchange, is applicable in all respects to the trumpet.

Notwithstanding the routine generally pursued, charming *piano* effects are to be obtained from trumpets; Gluck was one of the first to prove it, by his long holding-note of the two trumpets united pianissimo on the dominant, and since then, Beethoven and Weber have drawn great advantage therefrom.

In order that these notes may be produced with certainty, they should, in general, be taken in the medium, and not succeed each other too rapidly.

The five following may be taken and sustained pianissimo:—

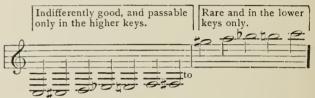


The quality of tone of the trumpet is noble and brilliant; it suits with warlike ideas, with cries of

fury and of vengeance, as with songs of triumph; it lends itself to the expression of all energetic, lofty, and grand sentiments, and to the majority of tragic accents. It may even figure in a jocund piece; provided the joy assume a character of impulse or of pomp and grandeur.

Trumpets with pistons and with cylinders have the advantage of being able, like the horns with pistons, to give all the intervals of the chromatic scale. They have lost nothing of the quality of the ordinary trumpet, by the super-addition of these facilities; and their correctness of intonation is satisfactory.

The general compass of trumpets with pistons and with cylinders is this:—



Major and minor shakes that are feasible on the trumpet with cylinders, are the same as those of the cornet with three pistons. (See farther on, the table of shakes for this instrument.)

Valved trumpets,—called so on account of their movable valve similar to that of the trombone, and which is moved by the right hand,—are, for this reason, fit for producing the truest intervals. Their sound is precisely the same as that of simple trumpets; and their compass is this:—



THE CORNET WITH THREE PISTONS; AND WITH CYLINDERS.

Its compass is about two octaves and two or three notes. The mechanism of pistons with which it is furnished, allows of its giving all the chromatic degrees, as far as the low F #, ; nevertheless

this note, and the two or three that precede it in descending,—such as A,Ab,G,—are hardly practicable but on high cornets alone. It is possible, on these

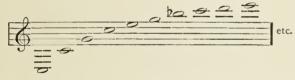
high cornets, to get out the double C below

ow 5

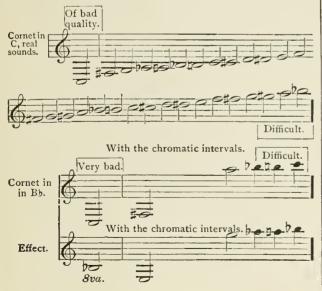
the first note of the natural resonance of the trumpet, as will presently be seen; but it is a note of very hazardous utterance, of very bad quality, and of very duoious utility.

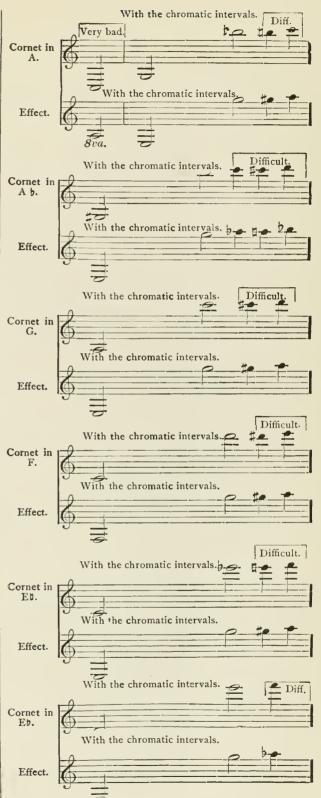
There are cornets in C, in Bb, in A, in Ab, in G, in F, in Et, in Eb, and in D. Besides, the low keys,—such as those of G, F, E, and D,— are generally of indifferent quality, and wanting in correctness of intonation. The best cornets—those, I think, which should be almost exclusively used,—are the cornets in A2, A4, and Bb. The highest of all, the cornet in C, is rather hard to play.

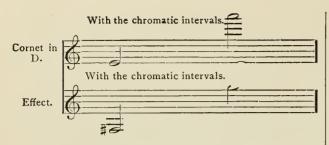
This is the compass that may be assigned to the different keys of the cornet à piston; certain players obtain some very dangerous notes still beyond, both above and below, — but these shall not be reckoned. It is written on the G clef. The natural resonance of its tube — shorter than that of trumpets — gives the following notes:—



And here is the chromatic compass given by the pistons, in the different keys:—







An opportunity occurs here for pointing out with regard to the last high notes of these examples, which all produce the same G, are of much less hazardous emission, and of much better sonorousness in the high keys than in the low ones. Thus the high B > of the cornet in A, and the the high A of the cornet in Bb, high G of the cornet in C, are incomparably better and more easy to play than the high F of the cornet in D, or than the high E of the And yet all these notes sound the same G. F Moreover, this observation applies equally to all the brass instruments.

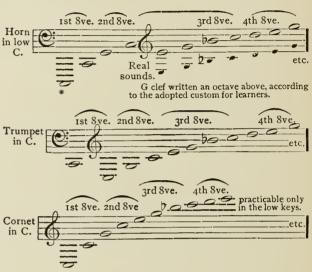
The larger part of major and minor shakes are practicable and of good effect, on this part of the compass of the high cornets à pistons, — such as those in A, Bb, and C.



Here is now the comparative table of the relations established between the pitches of the various keys, of horns, trumpets, and cornets.

The first low sound of the cornet in C,—as already seen, — is an octave above that of the trumpet in C; just as the first low sound of this trumpet

is an octave above that of the horn in (low) C. The natural notes of the horn (those which result from the resonance of the tube) thus reproduce themselves an octave above, and in the same order, in the trumpet; while those of the trumpet also all reproduce themselves an octave above, and in the same order, in the cornet, if the player's lips had the necessary force to bring out the highest ones; which is not the case.



It will be seen by the above,—and it is highly important to be remembered,—that the portion of the scale of the sounds of a brass instrument, where it can naturally produce (without pistons) these three notes only:—



is always its second octave going from low to high. Therefore, cornets a pistons have their favorite notes; especially in this second octave. By considering the cornets in A, in Bb, and in C, as trumpets an octave above the trumpets in A, in Bb, and in C, they might be thus written; but this has been judiciously avoided, and cornets have been written in their place on the musical scale, by making their lowest sound proceed from an octave above the lowest sound of the trumpet. The best notes of these cornets are within the compass, and in the vicinity of their second octave:—

* This note exists; it is really the first low one of the horns; but in all the low keys it is so detestable, and even so indistinct, that we have abstained from giving it a place in the scale of the sounds of the horn in (low) C; and for even greater reason, in that of the key of (low) Bb.

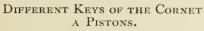


If cornets had been written as trumpets, these notes would always have been below the stave, and would have involved the constant employment of ledger lines. Thus:—

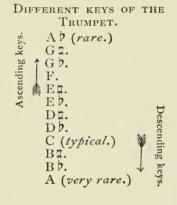


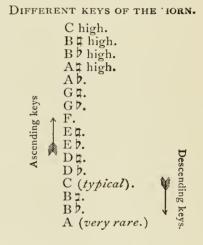
This inconvenient method of writing cornets à pistons is nevertheless adopted in Prussian military music; and of this it is well to be aware.

Now, there remains to consider (the key of C being taken as the point of departure, in horns, trumpets, and cornets), that the changing keys of the cornet proceed by elongation; and therefore, by becoming lower and lower: and this is why, in displaying their scale, we have commenced by the highest keys; whereas, those of trumpets and horns (with the exception of three,—those in B‡, in B¢, and in low A, which are lower than the key of C) proceed by shortening, and consequently by becoming higher and higher.



1st. C (typical key.)
2nd. B ♯.
3rd. B ♭.
4th. A.
5th. A ♭.
6th. G.
7th. G ♭.
8th. F.
9th. E ♯.
1oth. E ♭.
11th. D.





Now we must observe what affinities exist between horns, trumpets, and cornets, and the respective position they occupy on the scale of sounds.

I will here add, that trumpets with pistons, or with cylinders, having—as I have just said—their best notes within the compass, and in the vicinity of their third octave (which is found in unison with that of the second of the cornet), passages written for cornets à pistons in A, in B, and in C, within this compass:—



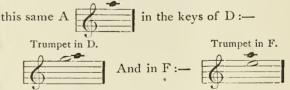
will necessarily be executable on trumpets in A, in B, and in C, without causing any change. This allows of replacing, without disadvantage, cornets by trumpets with cylinders, in orchestras like German ones, which have no cornets.

Cornets in A, in B, and in C, have, — minutely

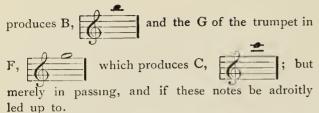
analyzed,—less compass than trumpets in A, in B, and in C; since they can scarcely reach above the



Trumpets, on the contrary, have, in the first place, several more notes below — however poor they may be; and, moreover, produce more easily than cornets,



Some artists, gifted with vigor of lip, can even sound the E of the trumpet in G, which



But performers capable of reaching these extreme notes are rare; and they should not, in writing, be too much counted upon.

Trumpets, having a narrow tube, a small mouthpiece, and a bell of little extent, have more facility in attacking the high notes. The tube of cornets, on the contrary, being rather thick, and almost conical, their bell and their mouth-piece also, being rather larger, the mastery of low notes becomes more easy to them than that of high notes, and their tone acquires the peculiar quality which distinguishes that of trumpets. This is the cause of that difference.

Before proceeding to the examination of the expressive character of the cornet à pistons, it is not unneedful to repeat here again what I have said in speaking of the horn with pistons, respecting the action of the three cylinders, or pistons, adapted to brass instruments generally. Not only do these three cylinders give to these instruments the chromatic scale (above their first octave), thereby supplying all the gaps which separate their natural notes from each other, but they also add six chromatic notes below the two lowest sounds. Thus, for cornets:—



For trumpets:

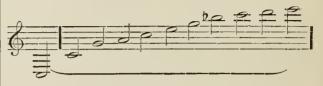
Detestable.

2nd low sound.

Still more detestable.

Still more detestable.

This first low C is already so indistinct and difficult to sustain, that the notes added below it for the pistons become, — as may be imagined, — absolutely impracticable. It is the same for the horns. Although the cornet possesses all the degrees of the chromatic scale, the choice of the change of key is not immaterial; it is always better to take that which offers the means of employing the most natural notes;—it is scarcely necessary here to repeat that the natural notes are those which come out without the aid of the pistons, by the sole effect of the resonance of the tube of the instrument; such as,—



— and which bears few or no sharps or flats at the signature. When the orchestra is playing in $E \sharp$, for instance, — as the cornet in $E \sharp$ is one of the least good, — the cornet in $A \sharp$ should be used, which would then play in G: —



If the orchestra be in D, the cornet in A \(\pm \) should still be used; and it would then play in F:—



If the orchestra be in Eb, the cornet in Bb should be taken, playing with one flat at the signature,—consequently in F, and so on with the rest.

A phrase which might appear tolerable, played on violins, or on wooden wind instruments, would lecome poor and detestably vulgar, if brought out by the snapping, noisy, bold sound of the cornet à pistons. This danger is obviated if the phrase be of such a nature that it can be played at the same time by one or more trombones; the grand sound of which then covers and ennobles that of the cornet. Employed in harmony, it blends extremely well with the general mass of brass instruments; it serves to complete the chords of the trumpets, and to contribute to the orchestra those diatonic or chromatic groups of notes,

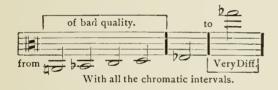
which, on account of their rapidity, suit neither the trombones nor the horns. Cornets à pistons are generally written in two parts,—often each in a different key.

TROMBONES.

Trombones are instruments with slides, of which the double tube can be lengthened or shortened instantaneously by a simple movement of the player's arm. It may be conceived that these variations of the length of the tube must completely change the key of the instrument,—which is the case. Whence it follows, that trombones, possessing, like all brass instruments, all the notes resulting from the natural resonance of the tube in all positions, have thereby a complete chromatic scale, interrupted only at one point below, as will presently be seen.

THE ALTO TROMBONE.

It possesses a compass of more than two octaves and a half; and is written on the C clef, third line;—



Its quality of tone is rather shrill, compared with that of the deeper trombones. Its lower notes sound somewhat badly. The high sounds, such as B, C, D, E, F, on the contrary, may be very useful. When its slide is closed, by means merely of the lips, the following notes may be obtained:—



Hence the name of the small trombone, or alto trombone, in $E \mathfrak{d}$.

THE TENOR TROMBONE.

This is, without doubt, the best of them all. It has a full and powerful sonorousness; it can execute passages whose rapidity renders them impracticable on the bass trombone; and its quality of tone is good throughout the whole extent of its scale. It is ordinarily written on the C clef, fourth line; but as it happens in certain orchestras that the three trombone parts are, under three different names, all never-

theless played on three tenor trombones, it follows that they are written, one, on the C clef, third line (like the alto), the second on the C clef, fourth line (like the tenor), and the third on the F clef (like the bass). Its slide being closed, it produces naturally the following notes, which are those of the resonance of all brass tubes in Bb; that is to say, tubes which, — sounded in their totality, — give for first low sound, a Bb:—



which has occasioned it to be called the trombone in B#. It is thus at a fourth below the alto trombone; and its compass is this:—



THE BASS TROMBONE

Is only rare on account of the fatigue experienced in playing it, even by the most robust performers. It is the largest and lowest of them all. When employed, it should have sufficiently long rests given to it, that the player may repose; and it should moreover be used with extreme discretion and wellreflected intention.

With the slide closed, it gives the notes,—



It is called the great trombone, or the bass trombone in Eb.

It is consequently an octave lower than the alto trombone, and a fifth below the tenor trombone. It is written on the F clef:—

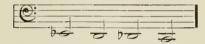


The sound of the bass trombone is majestic, for

midable, and terriole; and to it belongs of right the lowest part in all masses of brass instruments.

The bass trombone cannot lend itself to rapid movements; the length and size of its tube requires more time to be put in vibration, and it will readily be imagined that its slide, — manœuvered by the aid of a handle which supplies, in certain positions, the length of the arm, — does not admit of great agility.

All trombones — commencing from points more or less low — have the same compass, which has been seen to be of two octaves and a sixth. Besides this extensive scale, they also possess — at the extreme depth, and commencing from the first low sound of A (natural resonance of the tube), — three notes, which are enormous and magnificent on the tenor trombone, of indifferent sonorousness on the alto trombone, and terrible on the bass trombone when they can be got out. They are called pedals;



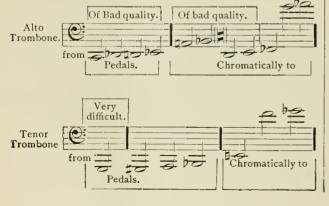
for the alto trombone;



for the tenor trombone; and the bass trombone would have these:—

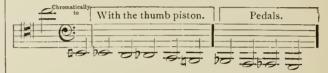


if all performers had the power of bringing them out. These notes, on all the trombones, are isolated from the others, by a gap of an augmented fourth.





Fortunately, the clever maker, Sax (of Paris) surmounted the difficulty by means of a single piston affixed to the body of the tenor trombone, which piston the performer moves with his thumb, maintaining the entire liberty of his right arm for manipulating the slide; and which, supplying the gap, now gives to the tenor trombone in Bb this immense compass:—



The vibrations of the pedal notes are slow, and require much wind; in order, therefore, to make them come out well, it is necessary to give them a sufficiently long duration, to make them succeed each other slowly, and to intersperse them with rests which will give the player time to take breath.

Another particular, unknown to the majority of composers—yet nevertheless very important to be known—is the difficulty, and even, in certain cases, the impossibility, for trombones to give in succession, and with any rapidity, the following notes:



The passing from one of these notes to the other, demanding an enormous change in the position of the slide, cannot be effected except in a very moderate movement.

It is equally, and for the same reasons, rather difficult to play at all fast this passage on the tenor trombone:—



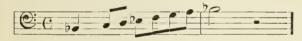
It is better to write it reversed; this succession of the notes, requiring no change of position.

The shake is practicable on trombones, but only on the notes of their upper octave. All the shakes are major, the minor shakes being impracticable.

The trombone possesses, in an eminent degree, both nobleness and grandeur; it has all the deep and powerful accents of high musical poetry, — from the religious accent, calm and imposing, to the wild clamors of the orgy.

The sound of the trombone is so markedly characterized, that it should never be heard but for the production of some special effect; its duty, therefore, is not to strengthen the double basses, with which its quality of tone has no sort of sympathy. Besides, a single trombone in an orchestra seems always more or less out of place. This instrument needs harmony, or, at least, unison with the other members of its family, in order that its various attributes may be completely manifested.

It is difficult to determine with precision the degree of rapidity to which trombones can attain in passages; nevertheless, here is, I believe, what may be said on this point: in a bar of four-time, and in the movement *Allegro moderto*, for instance, a passage of simple quavers (eight notes in a bar) is feasible on the bass trombone:—



The other trombones — alto and tenor — being a little more agile, will execute without much difficulty, passages of quavers in triplets (twelve notes in a bar):



but these are the natural boundaries of their agility; to pass beyond them, is to fall into mess and confusion,—if not into impossibility.

The character of tone in trombones varies according to the degree of loudness with which their sound is emitted. In a fortissimo, it is menacing and formidable; particularly, if the three trombones be in unison, or at least, if two of them be in unison, the third being an octave below the two others. Such also is — but still more sublime — the immense shout of the three united trombones.

In simple *forte*, trombones, in three-part harmony, in the medium particularly, have an expression of heroic pomp, of majesty, of loftiness. They then acquire—with increased grandeur,—the expression of trumpets; they no longer menace, they proclaim; they chant instead of roar.

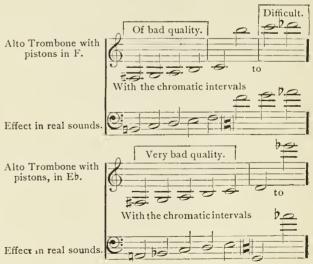
In *mezzo-forte* in the medium, in unison or in harmony with a slow movement, trombones assume a religious character.

The *pianissimo* of trombones applied to harmonies belonging to the minor mode, is gloomy, lugubrious, almost hideous. If, particularly, the chords be brief, and broken by rests, it has the effect of hearing some strange monsters giving utterance, in dim shadow, to howls of ill-suppressed rage.

THE ALTO TROMBONE WITH PISTONS; OR WITH CYLINDERS.

There are alto trombones in E^{\uparrow} , and in F; and it is absolutely requisite to denote for which of these keys the composition is written, since the habit has obtained of treating this trombone as a transposing instrument. It has no slide; and is, in some sort, only a cornet à pistons in E^{\uparrow} , or in F, with rather more sonorousness than the regular cornets.

The compass of the alto trombone with pistons is nearly the same as that of the ordinary alto trombone. It is written on the G clef, transposing; as with the cornet à pistons.



The shakes of the alto trombone with a slide, and which the performer makes with the lips only, are practicable on the trombone with pistons. Some of

them may be made also with the pistons; but it should be observed that the minor shakes are the only ones which produce a good effect, and which can be done rapidly. These are the best:—

Example of shakes produced by the pistons.



The system of pistons adapted to the trombone give it much agility, but cause it to loose somewhat of its correctness of intonation.

THE BUGLE, OR CLARION.

The simple bugle, or clarion, is written on the G clef, like the trumpet; it possesses, in all, eight notes,—



and even the latter, the high C, is only practicable on the deepest bugle; while the low one is of a very bad quality of tone. There are bugles in three keys: in Bb, in C, and in Eb. The flourishes played upon them, lying always exclusively on the three notes of the common chord, are necessarily so monotonous as to be almost wearisome. The quality of this instrument is rather ungraceful; it generally wants nobleness; and it is difficult to play it well in tune. As it can execute no diatonic succession, shakes are necessarily precluded upon it.

The Bugle, being a much shorter instrument than the trumpet, only possesses the notes of the three lower octaves of this latter:—



but on account of the small length of its tube, these notes come out an octave higher. That is why it is written—



Thus the bugle, or clarion, in C, is a non-transposing instrument; while the bugles in Bb, and in Eb, on the contrary, are written transposing.

THE KEYED BUGLE.

In cavalry music, and even in certain Italian orchestras, bugles with seven keys are found, which traverse chromatically a compass of more than two octaves, beginning from Bt beneath the stave, up to the C above:—

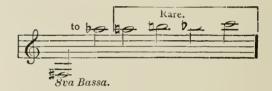
The keyed bugle can make the shake upon all the notes of the scale, with the exception of this:—



It does not want for agility, many artists play it in a remarkable way; but its quality does not differ from that of the simple bugle or clarion.

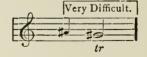
THE BUGLE WITH PISTONS; OR WITH CYLINDERS.

It has a lower compass than the preceding; but this is a slender advantage, for its bass notes are of a very bad quality, and moreover come out easily only upon the small bugle in E; the compass of which, consequently is this:—



This instrument is much better than the keyed bugle; it produces a good effect in playing certain melodies of slow movements, or at least moderate movements; its quality presents, for lively or gay phrases, the same inconvenience which we pointed out in the cornets à pistons, that of lacking distinction.

Beginning from the middle E, all the major and minor shakes are good upon the bugle with pistons, excepting this:—



THE BASS OPHICLEIDE.

Ophicleides, are the altos and basses of the bugle. The bass ophicleide offers great resources for maintaining the low part of masses of harmony; and it is also the most used. It is written on the F clef, and its compass is three octaves and one note:—



In the hands of a skilful artist, the major and minor shakes are possible on this part of the scale; as proved by M. Caussinus in the excellent work which he has just published:—



Passages of a certain rapidity, diatonic, and even chromatic, are practicable in the three upper octaves of the ophicleide; but are excessively difficult below, where they moreover produce no other than a detestable effect.

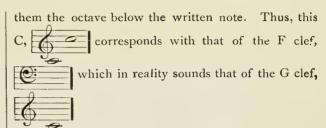
Staccato passages are much less easy, — nay, almost impossible—in a quick movement. There are bass ophicleides in two keys, in C and Bb; and there are some even made at present in Ab. These latter will be of great utility, on account of the extreme depth of their lower notes, which form a unison with the three-stringed double basses. The ophicleide in Bb, has already rendered eminent service in this respect. They are each of them written, transposing, like all transposing instruments:—

The first low G is, as will be seen, the unison of this on the double-bass.

The quality of these low sounds is rude; but it does wonders—in certain cases—beneath masses of brass instruments. The very high notes have a wild character, of which perhaps sufficient advantages have not yet been made. The medium too much recalls the sounds of the cathedral serpent.* I think it should be rarely allowed to be heard much displayed.

THE ALTO OPHICLEIDE.

There are alto ophicleides in F and E, and their compass is the same as that of the bass ophicleides; they are both written on the G clef, like horns; and, in the same way as for horns, this clef represents for



They are employed in some kinds of military music to fill up the harmony; and even to execute certain phrases of melody: but their quality is generally disagreeable, and not noble, and they want precision in tune; hence the almost complete neglect into which these instruments have now fallen.

THE DOUBLE - BASS OPHICLEIDE.

The double-bass ophicleides, or monster ophicleides, are very little known. They may be useful in very large orchestras; but, until now, no one has been willing to play them in Paris. They require an amount of breath which would exhaust the lungs of the most robust man. They are in F and Et, a fifth below the bass ophicleides in C and in Bt; and an octave below the alto ophicleides in F and in Et. They must not be made to go higher than the F.

It is needless to state that shakes and rapid passages are incompatible with the nature of such instruments.

THE BOMBARDON.

This is a low instrument, without keys, and with three cylinders; the quality of which differs but little from that of the ophicleide.

Its compass is this:



It possesses five notes still beyond, both above and below; but they are of uncertain emission, and are better avoided.

This instrument — whose sound is very powerful — can execute only passages of moderate movement. Florid passages and shakes are precluded. It produces a good effect in large orchestras where wind instruments predominate. Its tube gives naturally the notes of the chord of F, which is why it is called in F; nevertheless, the custom is, in Germany, to treat it like the trombone, as a non-transposing, and to write for it only real sounds.

^{*} An instrument much used in French churches.

THE BASS-TUBA (THE DOUBLE-BASS OF HARMONY.)

The bass-tuba possesses an immense advantage over all other low wind instruments. Its quality of tone, incomparably more noble than that of ophicleides, bombardons, and serpents, has something of the vibration and quality of tone of trombones. It has less agility than ophicleides; but its sonorousness is more powerful than theirs, and its low compass is the largest existing in the orchestra. Its tube gives the notes of the chord of F; nevertheless, Adolphe Sax now makes bass-tubas in Eb. Notwithstanding this difference, they are all treated in Germany as non-transposing instruments. The bass-tuba has five cylinders, and its compass is four octaves.



The bass tuba can still produce some few notes beyond above, and even below, by aid of the cylinder mechanism. Those of the extreme high are very dangerous; while those of the extreme low are scarcely to be heard; the C, the Bb, and the A, are only to be distinguished by doubling them in the octave above with another bass-tuba part; this both imparting to them and acquiring from them additional sonorousness.

It must be well understood, that this instrument is not better adapted than the bombardon to shakes and rapid passages. It can play certain measured melodies. An idea can hardly be formed of the effect produced in grand military harmonies by a mass of bass-tubas. It has at once something of the trombone and of the organ.

Instruments with a Mouth-Piece, and of Wood.

THE SERPENT

In a wooden instrument covered with leather, and having a mouth-piece; it has the same compass as the ophicleide, with rather more agility, precision in tune, and sonorousness. These are three notes,—



nuch more powerful than the others; hence those startling inequalities of tone, which its players should apply themselves with all care to overcome as much as possible. The serpent is in Bb; consequently, it must be written a whole tone above the real sound, like the ophicleide in Bb.



The quality of tone is essentially barbarous. Its frigid and abominable blaring seems to invest with a kind of lugubrious poetry those words expressive of all the horrors of death, and the vengeance of a jealous God. It would be no less well placed in profane compositions, where ideas of this nature had to be expressed; but then only. It mingles ill, moreover, with the other qualites of orchestra and voices; and as forming the bass to a mass of wind instruments, the bass-tuba, and even the ophicleide, are greatly preferable.

THE RUSSIAN BASSOON

Is a low instrument of the serpent kind, whose quality of tone has nothing very characteristic, whose sounds lack steadiness, and consequently precision in tune; and which, in my opinion, might be withdrawn from the family of wind instruments without the smallest injury to Art. Its general compass is



The best notes of the Russian bassoon are D and Eb. Only detestable effects are to be obtained from shakes on this instrument. Russian bassoons are found in military bands, but it is to be hoped that they will no longer figure there.

VOICES.

Voices are naturally divided under two great heads, — male voices, or low voices; and female voices, or high voices. These latter comprise not only the voices of women, but also the voices of children of both sexes, and the voices of artificial sopranos. Both the one and the other are again subdivided into two distinct species, which generally received theory considers as being of the same compass, and differing only among themselves in degree of depth. According to established custom in all the schools of

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Italy and Germany, the lowest man's voice (the bass) will reach from F below the stave (F clef) up to D and E b above; and the highest man's voice (the tenor) placed a fifth above the preceding, will consequently go from the C below the stave (C clef on fourth line) up to the A and B b above. The voices of women and children will, in the same order, range precisely an octave higher than the two men's voices, dividing themselves under the names of contralto and soprano; the first corresponding with the bass voice, the second with the tenor voice. Thus, the contralto will go, like the bass, from the low F to the high E b (nearly two octaves); and the soprano, like the tenor, from the low C to the high B b.

Here is the most sonorous compass of the seven different voices to be found in most great choral bodies. I abstain from indicating the extreme upper or lower notes possessed by certain individuals, which should only be written exceptionally:—



Choruses of women in three parts have an enchanting effect in pieces of a tender and religious character; they are then disposed in the order of three voices just stated,—first soprano, second soprano, and third soprano, or contralto.

Sometimes a tenor part is given as bass to these three-part female voices; but it can only be in a case where the object is to produce a soft and calm effect, such a chorus having naturally but little energy.

Choruses composed of men's voices only, have much power, on the contrary; and the more, because the voices are deeper and less divided. . . The division of the basses into firsts and seconds (to avoid the high notes) is less necessary in rude and fierce accents, to which sounds forced and exceptional—like the high F and F:—agree better from their peculiar character than the more natural sounds of the tenors upon the same notes. But it is necessary to lead to these notes, and to bring them in dexterously, taking care not to make them pass abruptly from the medium, or depth, to the extreme upper register.

When the tenors are compelled by the exigence of a melodial design to descend too low, the first basses are there to serve them as auxiliaries, and to strengthen them without perverting their vocal character by a difference of quality in tone too marked. It would not be the same, if the composer were to give the tenors — or still less, the basses —as auxiliaries to the contraltos and second sopranos: the female voice would then be almost ecilpsed; and, from the moment of the male voice's entrance, its character of vocal sonorousness would change abruptly, so as to break the unity of execution in the melody.

It will easily be conceived that the composer has to make his choice of the register of voices subservient to the character of the piece in which he employs them. He should use only notes of the medium in an Andante with soft and sustained sounds.

Fine effects are nevertheless to be obtained from the extreme low notes of the second basses such as the E7, and even the D below the stave, when they are preceded by sufficient time for breath, and when they are written upon a sonorous syllable. Brilliant, pompous, or violent choruses should, on the contrary, be written rather higher; without, however, letting the prevalence of high notes be too constant, and without giving the singers many words to pronounce rapidly.

We have not yet spoken of those very high notes of the voice called *head notes* or *falsetto*. They are of great beauty in tenor singers, whose compass they considerably augment. Head notes are of good effect for basses and baritones only in an extremely light style of music, such as that of our French comic operas; these high and feminine-toned sounds, so dissimilar from the *natural notes*—called *chest notes*—of the low voices, have, in fact, something revolting, everywhere but in buffo music.

For the effective employment of very low notes of

bass-singers, they should never be given successions of notes too rapid, or too much overcharged with words. In another point of view, also, choral vocalizations in the lowest part of the scale are of detestable effect. It is but fair to add, that they are not much better in the medium; and that notwithstanding the example set by the majority of the great masters, those ridiculous roulades on the words "Kyrie eleison," or on the word "Amen," which would suffice to render vocal fugues in church music an indecent, abominable buffoonery, will be, it is to be hoped, banished in future from every sacred composition worthy of the name. Slow and soft vocalizations of solo soprano, accompanying a melody of the other voices placed beneath, are, on the contrary, of a pious and angelic expression. It should not be forgotten, to intersperse them with short rests, to afford breathing-time for the chorus-singers.

These modes of utterance which produce from men voice-sounds called *mixed*, and *veiled*, are extremely valuable, and give much character to both solo-singing and choral-singing.

The art of writing for single voices is really swayed by a thousand circumstances, very difficult to determine, but which it is necessary to take into account, and which vary with the individual organization belonging to each singer.

A tenor solo— of all the voices—is the most difficult to write, on account of its three registers, comprising the chest notes, the mixed notes, and the head notes, of which the extent and the facility,—as I have already said,—are not the same in all singers.

The first soprano voice is rather less difficult to treat than the first tenor; its head notes are scarcely different from the rest of the voice. Still, it is well to know the singer for whom one writes. Mezzo soprano (second sopranos) and contralto voices, are generally more homogeneous, more equal, and consequently more easy to employ. Nevertheless, care should be taken, for both of them, not to place many words on those phrases occurring high; the articulation of syllables then becoming very difficult, and sometimes impossible.

The most convenient voice, is evidently the bass, on account of its simplicity. Head notes, being banished from its list, there need be no anxiety as to the changes of its quality; and the choice of syllables becomes also—on this very account—less important. Every singer with a true bass voice, ought to be able to sing all reasonably written music, from the low G to the ED above the stave. Baritones are often almost

always within a single octave (from the middle Eb to the Eb above), which places the composer in the predicament of being unable to avoid an awkward monotony.

The excellence or mediocrity of vocal execution in choral bodies, or in solo-singers, depend not only on the art with which the registers of the voices are chosen, on that with which means are contrived for them to take breath, or on the words given them to sing, but also very much on the manner in which composers dispose their accompaniments. Some overwhelm the voices; others, without burdening the orchestra beyond measure, take delight in displaying some particular instrument. We do not mean that simplicity of accompaniment should be carried to such excess as to preclude orchestral design.

A single instrument playing in the orchestra some well-designed phrase like a vocal melody, and forming with it a sort of duet, is also very often of excellent effect.

It is seldom good likewise to double in the octave or unison the vocal part of an instrument, particularly in an *Andante*.

In choruses, or in grand tutti pieces, it is sometimes the fashion to form a sort of vocal orchestra; one portion of the assembled body then assumes the shape of instrumental style, to execute beneath the song, accompaniments measured and designed in various manners. It almost always produces charmin effects.

Here occurs a good opportunity to point out to composers, that in choruses accompanied by instruments, the harmony of the voices should be correct, and treated as if they were alone. The various qualities of tone of the orchestra are too dissimilar from the vocal qualities, to fulfil towards them the office of a bass harmony, without which certain successions of chords become defective.

The system of choruses of men's voices in unison, introduced into dramatic music by the modern Italian school, gives occasionally some fine results.

Double choruses are, on the contrary, of a richness and pomp quite remarkable.

Instruments of Percussion.

They are of two kinds: the first comprises instruments of decided sound, and musically appreciable; and the second those of which the less musical sound can be ranked only among noises destined to produce special effects, or to the *colorisation* of the rhythm.

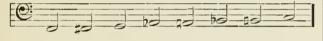
Kettle-drums, bells, the glockenspiel, the keyed harmonica, small ancient cymbals, have decided sounds.

The long drum, the side-drum, the drum, the tambour basque (or tambourine), the common cymbals, the tam-tam, the triangle the pavillon chinois, are in a contrary case, and merely make noises variously characterised.

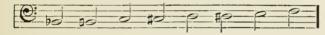
KETTLE - DRUMS.

Of all instruments of percussion, kettle-drums appear to me to be the most valuable.

The compass of kettle-drums is one octave, from to to the screws which compress the circumference of each kettle-drum, and which augment or diminish the tension of the parchment, the low kettle-drum can be tuned in the following keys:—



and the high kettle-drum in these:-



Tuning in fourth, will be dull, the parchment of the two kettle-drums being then very little strained; the F, particularly, will be vapid and of bad quality. Tuning in fifth, becomes sonorous from the opposite reason. It is the same with kettle-drums in Ft, which may be tuned in two ways; in fifth, Kettle-drums are now tuned in all

sorts of ways,—in minor third or major, in second, in fourth true or augmented, in fifth, in sizth, in seventh, and in octave.

It is sometimes well to designate the notes that the drummer should play with two drumsticks at once, or with a single drumstick.



The nature of the rhythm, and the place of the loud accents should decide the choice.

The sound of kettle-drums is not very low; it is

played as it is written on the F clef, in unison with the corresponding notes on the violoncellos, consequently, and not an octave below, as some musicians have supposed.

BELLS.

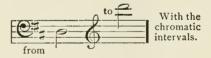
They have been introduced into instrumentation for the production of effects more dramatic than musical. The quality of low bells is appropriate only to solemn or pathetic scenes: that of high bells, on the contrary, gives rise to more serene impressions: they have something rustic and simple about them, which renders them particularly suitable to religious scenes of rural life.

SETS OF BELLS.

Especially in military music, felicitious effects are obtained from a series of very small bells (similiar in quality to chimney-clocks) fixed one above another on a frame of iron, to the number of eight or ten, and ranged diatonically in the order of their size: the highest note naturally comes at the summit of the pyramid, and the deeper ones lowest. These kind of chimes, made to vibrate by a little hammer, can execute melodies of measured rapidity, and of small extant of compass. They are made in different scales. The highest are the best.

THE GLOCKENSPIEL.

Mozart has written, in his opera of the *Magic Flute*, an important part for a keyed instrument that he calls Glockenspeil (set of bells), composed doubtless of a great number of very small bells, arranged in such a manner as to be put in vibration by a mechanism of keys. He gave it the following compass; and wrote it upon two lines and two clefs, like the pianoforte:—



When they got up at the Paris opera the imperfect Pasticcio, in which was introduced a portion of the music in the Magic Flute, they had made, for the glockenspeil piece, a little instrument, the hammers of which, instead of striking on bells, struck upon bars of steel. The sound is produced an octave above the written notes; it is sweet, mysterious, and of extreme delicacy. It adapts itself to the most rapid movements; and is imcomparably better than that of little bells.

THE KEYED HARMONICA.

Is an instrument of the same kind as the preceding; the hammers striking upon plates of glass. Its quality of tone is of an imcomparably voluptuous delicacy. Like that of the key-board of steel bars I have just mentioned, its sonorousness is extremely weak; which should be kept in mind when associating it with other instruments of the orchestra. The least loud accent of the violins alone, would suffice to cover it entirely. It would blend better with light accompaniments of pizzicato, or harmonics; and with some very soft middle notes of the flutes.

The sound of the keyed Harmonica comes out as it is written. It can hardly be given more than two

being scarcely perceptible, and those beyond the low

D, having but a very poor tone, and still

more weak than the rest of the scale. It is written, like the preceding, on two lines and two G clefs.

It is needless to add, that the mechanism of exacution on these two little key-boards is exactly the same as that of the pianoforte; and that all the passages, arpeggios, and chords may be written for them, in their respective compass, which would be written for a very small pianoforte.

ANCIENT CYMBALS.

They are very small; and their sound becomes higher, in proportion as they are thicker and less in size. I have seen some no larger than a dollar. The sound of those is so high and so weak, that it could hardly be distinguished without a complete silence of the other instruments. These cymbals served, in ancient times, to mark the rhythm of certain dances,—like our modern *castanets*, doubtless.

THE LONG DRUM.

Among the instruments of percussion, with an indefinite sound, assuredly the long drum is the one which has caused the greatest amount of nonsense and barbarism, in modern music.

The long drum has an admirable effect, when judiciously employed. It should, for example, be introduced in a full piece, in the midst of a large orchestra, merely to redouble little by little the force of a lofty rhythm already established, and gradually teinforced by the successive entrance of groups of the

most sonorous instruments. Its introduction then does wonders; the *swing* of the orchestra is reduced to measured potency; the noise thus disciplined is transformed into music. The *pianissimo* notes of the long drum, united with the cymbals in an andante and struck at long intervals, have something very grand and solemn about them. The *pianissimo* of the long drum *alone*, is, on the contrary, gloomy and menacing (if the instrument be well made, and of large size); it resembles a distant sound of cannon.

CYMBALS.

Cymbals are very often united with the long drum; but, as I have just said, they may be treated isolatedly with the greatest success on numerous occasions. Their quivering and shrill sounds—the noise of which predominates over all the other noises of the orchestra,—ally themselves imcomparably well, in certain cases, either with sentiments of extreme ferocity (then united to sharp whistling of picolo flutes, and to the strokes of the kettle-drum or small drum), or with the feverish excitement of a bacchanalian orgy, where revelry verges upon frenzy.

A vigorous and well-marked rhythm gains greatly in an immense chorus, or in the dance-tune of an orgy, if executed, not by a single pair of cymbals, but by four, six, ten pairs, and even more, according to the space, and to the mass of other instruments and voices. The composer should always be careful to determine the length that he wishes his cymbal notes to last, followed by a rest; in case he wish to have the sound prolonged, he must write long and sustained notes, with this indication: - "let them vibrate;" but in the contrary case, he must place a quaver or a semiquaver, with these words :-- "damp the sound." Sometimes, a drumstick with a sponge end, or of a long drum, is used, with which to strike a cymbal suspended by its leather strap. This produces a metalic quiver of tolerable length; sinister, though without the formidable accent of a stroke of the gong.

THE CONC.

The gong, or tam-tam, is employed only in funereal compositions, and dramatic scenes, where horror is carried to its height. The vibrations of the gong, mingled *forte* with the thrilling chords of the brass instruments (trumpets and trombones), make the hearer shudder; its pianissimo strokes, nearly by

themselves, are no less fearful from their lugubrious sound. M. Meyerbeer has proved this in his magnificent scene of *Robert le Diable*.

TAMBOUR BASQUE (OR TAMBOURINE).

This favorite instrument of the Italian peasantry, and which figures in all their festivities, is of excellent effect, employed in masses, to strike like cymbals, and with them, a rhythm in a scene of dance or orgy. It is seldom introduced alone in the orchestra; unless in a case where the subject of the piece renders it illustrative of the manners of the people. It produces three kinds of very different noises; when it is simply struck with the hand, its sound has not much effect (unless employed in numbers); and the tambourine thus struck is not distinguishable unless left nearly alone by the other instruments: if it be played by rubbing its parchment with the ends of the fingers, there results a roll in which the noise of the small bells attached round its edge are to be chiefly heard; and which is thus written ; but this roll should be very short, because the finger which rubs the parchment of the instrument, soon attains, as it advances, the edge, which puts an end to its action.

By rubbing, on the contrary, the parchment, without quitting it, with the whole weight of the thumb, the instrument gives out a wild rumbling — sufficiently grotesque and ugly.

THE DRUM.

Drums, properly so called—called also "caisses claires"—are rarely well placed otherwise than in large orchestras of wind instruments. Their effect is the better and the nobler, in proportion as they are more numerous; eight, ten, twelve, or more drums, executing in a military march rhythmical accompaniments, or *crescendo* rolls, prove magnificent and powerful auxilliaries to the wind instruments. Simple rhythms, without either melody, harmony, key, or anything that really constitutes music, solely serving to mark the march-step of soldiers, become attractive, when performed by a body of forty or fifty drums alone.

Drum are used muffled, like kettle-drums; but, instead of covering the parchment with a piece of cloth, the players often content themselves with loosening the braces of the drum, or with passing a leather strap between them and the lower parchment, in such a way as to check the vibrations. The drums

then acquire a dim dull sound, somewhat analogous to that produced by muffling the upper parchment; and which renders them fit only for compositions of a funereal or terrible character.

THE CAISSE ROULANTE, OR SIDE - DRUM.

The side-drum is only a drum rather longer than the preceding one; and of which the body is in wood instead of being in brass. Its sound is dull, and tolerably like that of the drums without tone or muffled. It produces a sufficiently good effect in military music; and its subdued rolls serve as a kind of back-ground to those of the drum.

THE TRIANGLE.

Since at the present time there is made so deplorable an abuse of this instrument—as of the long drum, cymbals, kettle-drums, trombones, and in short of all that thunders, sounds, and resounds—it is still more difficult to find fit occasion for introducing it into the orchestra than even the others; its metallic noise suits only pieces of an extremely brilliant character when *forte*, or of a certain wild whimsicality when *piano*.

NEW INSTRUMENTS.

SAXOPHONES.

These new voices given to the orchestra, possess most rare and precious qualities. Soft and penetrating in the higher part, full and rich in the lower part, their medium has something profoundly expressive. It is, in short, a quality of tone sui generis, presenting vague analogies with the sound of the violoncello, of the clarinet and como inglese, and invested with a brazen tinge which imparts a quite peculiar accent. The body of the instrument is a parabolic cone of brass, provided with a set of keys. Agile,—fitted for the execution of passages of a certain rapidity, almost as much as for cantilena passages,—saxophones may figure with great advantage in all kinds of music; but especially in slow and soft pieces.

The quality of tone of the high notes of low saxophones, partakes something of painful and sorrowful; while that of their bass notes, is, on the contrary, of a calm grandeur.

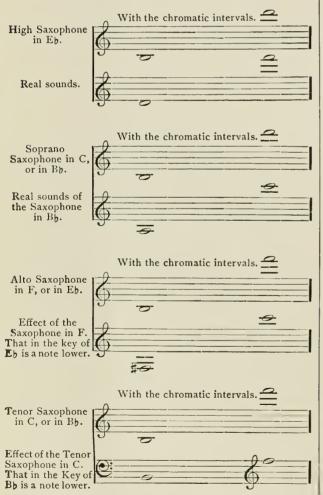
All of them,—the baritone, and the bass, principally—possess the faculty of swelling and diminishing their sound; whence results,—in the loweextremity of their scale,—effects hitherto unheard

802 SAX-HORNS.

and quite peculiar to themselves, at the same time bearing some resemblance to those of the expressive organ. The quality of tone of the high saxophone is much more penetrating than that of clarinets in BP and in C, without having the piercing and often shrill brilliancy of the small clarinet in EP. As much may be said of the soprano. This instrument is played with great facility; its fingering proceeding from the fingering of the flute, and from that of the hautboy. Clarinet-players, already familiar with the mouthing, render themselves masters of its mechanism in a very short time.

Saxophones are six in number:—the high, the soprano, the alto, the tenor, the baritone, and the bass saxophone.

The compass of each of them is nearly the same; and here is their scale, written for all on the G clef, like that of clarinets, after the system proposed by M. Sax, and already adopted by composers:—

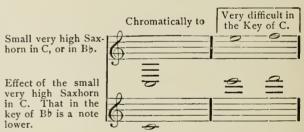




Major and minor shakes are practicable on almost all the extent of the chromatic scale of the saxophone.

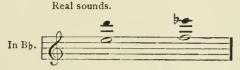
SAX - HORN.

Their sound is round, pure, full, equal, resounding, and of a perfect homogeneousness throughout all the extent of the scale. The changing keys of the saxhorn proceed, like those of the cornet à pistons, by descending; commencing from the typical instrument, the small very high sax-horn in C, which is at an octave above the cornet in C. The custom has obtained in France of writing all these instruments,—as well as saxotrombas and sax-tubas, the lowest and the highest—on the G clef, as horns are written; with this difference only, that if, for the horn in low C, we have to represent the real sound an octave below the note written on the G clef, we must—for certain very low instruments of Sax—represent it two octaves below.



The extreme lower notes are of rather a bad quality of tone, and this instrument should rarely be employed beneath the low A. But there is nothing more brilliant, more neat, more devoid of shrillness—notwithstanding their vivid appeal—than all the notes of the latter octave. This quality of tone is besides so clear and so penetrating, that it allows a single very high sax-horn to be distinguished through a considerable mass of other wind instruments. The very high sax-horn in Bb is more used than the one in C; and although it is a note lower than the other, there is already much difficulty—or at least much

care - for the performer to bring out the two last sounds :-



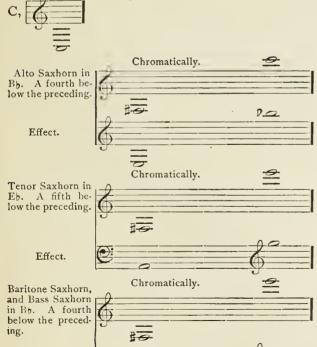
It requires, therefore, to be very sparing of these precious notes, and to introduce them with skill.



Commencing with the soprano sax-horn in E^{\flat} , we can no longer indicate the first low note of the tube's resonance. It is too bad to be employed.

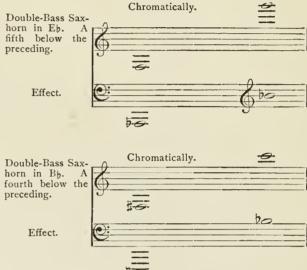
We will merely forewarn composers that, if they indicate an instrument with four cylinders, the chromatic compass of the low part of this instrument no longer





Effect

These two sax-horns,—the baritone and bass, have the same compass in the high part of the instrument. The tube is only rather smaller for the baritone. The bass, which has almost always four cylinders, has a tube somewhat wider, which allows of its descending lower and more easily.



There are, moreover, the low double-bass sax-horn in E^{\flat} , and the drone sax-horn in E^{\flat} , which are at an octave below the two preceding; but of which only the medium notes should be employed in a moderate movement.

THE ORCHESTRA.

The orchestra may be considered as a large instrument capable of uttering at once or successively a multitude of sounds of different kinds; and of which the power is mediocre or colossal, according as it comprises the whole or a part only of those executive means belonging to modern music, and according as those means are well or ill chosen and placed in acoustic conditions more or less favorable.

It may be demonstrated easily, and in a method almost exact, the art of making orchestras fit to render faithfully compositions of all shapes and dimensions.

Theatrical orchestras and concert orchestras should be distinguished the one from the other. The former in certain respects, are generally inferior to the latter

All well-organized concert orchestras should be arranged in steps. If it have been erected in a theatre, the stage should be completely closed in at the back, at the sides both right and left, and above.

Owing to the construction of our theatres, the instrumentalists are deprived of the majority of the advantages resulting from the arrangement I have just indicated for a concert ochestra. The difference

is such, that composers are almost compelled to bear this in mind, and not to instrument their dramatic scores quite in the same way, as symphonies, masses, or oratories, intended for concert-rooms or churches.

For Beethoven's symphonies, Weber's overtures, and modern compositions conceived in the grand and impassioned style, there needs, on the contrary, the mass of violins, violas, and basses.

PART III.

THE ORCHESTRAL CONDUCTOR.

THEORY OF THE ART.

The orchestral conductor should see and hear; he should be active and vigorous, should know the composition, the nature and compass of the instruments, should be able to read the score, and possess,—besides especial talent—other almost indefinable gifts, without which an invisible link cannot establish itself between him and those he directs; the faculty of transmitting to them his feeling is denied him, and thence, power, empire, and guiding influence completely fail him. It is then no longer a conductor, a director, but a simple beater of time,—supposing he knows how to beat it, and divide it, regularly.

They should feel that he feels, comprehends, and is moved; then his feeling, his emotion communicate themselves to those whom he directs, his inward fire warms them, his electric glow electrifies them, his force of impulse excites them. If he be inert and frozen, on the contrary, he paralyzes all about him.

His task is a complicated one. He has not only to conduct, in the spirit of the author's intentions, a work with which the performers have already become acquainted, but he has also to give them this acquaintance, when a work is in question that is new to them. He has to criticise the errors and defects of each, during the rehearsals, and to organize the resources at his disposal in such a way as to derive the best use he can of them, with the utmost promptitude.

Let us now examine what forms the *mechanical* part of this art.

The talent of beater of the time, without demanding very high musical attainments, is nevertheless

sufficiently difficult to obtain; and very few persons really possess it. The signs that the conductor should make,—although generally very simple—nevertheless become complicated under certain circumstances, by the division and even the subdivision of the time of the bar.

The conductor, above all, is bound to possess a clear idea of the principal points and character of the work; in order that he may, without hesitation or mistake, at once determine the time of each movement. If he have not the opportunity of receiving his instructions, or if the times have not been transmitted to him by tradition, he must have recourse to the indications of the metronome, and study them well; I do not mean by this to say that it is necessary to imitate mathematical regularity of the metronome; all music so performed would become of freezing stiffness, and I even doubt whether it would be possible to observe so flat a uniformity during a certain number of bars. But the metronome is none the less excellent to consult, in order to know the original time, and its chief alterations.

If the conductor possess neither the author's instructions, tradition, nor metronome, indications,— which frequently happens in the ancient masterpieces,— he has no other guide than the vague terms employed to designate the time to be taken, and his own instinct. We are compelled to admit, that these guides are too often insufficient and delusive. Of course no one can be at loss to distinguish a Largo from a Presto. If the Presto be two in a bar, a tolerably sagacious conductor, from inspection of the passages and melodial designs contained in the piece, will be able to trace the degree of quickness intended by the author. But if the Largo be four in a bar, of simple melodial structure.

and containing but few notes in each bar, what means would the hapless conductor have of discovering the true time? And in how many ways might he not be deceived! The different degrees of slowness that might be assigned to the performance of such a Largo are very numerous; the individual feeling of the orchestral conductor must thence become the sole authority.

I will now suppose the conductor to be perfectly well acquainted with the times of the different movements in the work of which he is about to conduct the performance or rehearsals; he wishes to impart to the musicians acting under his orders, the rhythmical feeling within him, to decide the duration of each bar, and to cause the uniform observance of this duration by all the performers. Now this decision and this uniformity can only be established in the more or less numerous assemblage of band, and chorus, by means of certain signs made by their conductor.

These signs indicate the principal divisions, the accents of the bar, and, in many cases, the subdivisions, and the half accents.

The orchestral conductor generally uses a small light stick, of about a foot in length, and rather whitish than of a dark colour (it is seen better), which he holds in his right hand, and to make clearly distinct his mode of marking the commencment, the interior division, and the close of each bar.

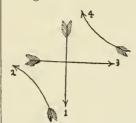
The simplest of all times,—two in a bar,—is likewise beaten simply.

The arm and the stick of the conductor being raised, so that his hand is on a level with his head, he marks the first beat, by dropping the point of his stick perpendicularly from up to down (by the bending of his wrist, as much as possible; and not by lowering the whole arm), and the second beat by raising perpendicularly the stick by a contrary gesture.

The time—one in a bar—being in reality, and particularly for the conductor, but the time of two in a bar extremely rapid, should be beaten like the preceding. As the conductor is obliged to raise the point of his stick, after having lowered it, moreover necessarily divides this into two portions.

In the time — four in a bar — the first gesture, from up to down, is universally adopted for marking the first accented part, the commencement of the bar.

The second movement made by the conductingstick, from right to left, rising, indicates the second beat (first unaccented part). A third, transversely, from left to right, indicates the third beat (second accented part); and a fourth, obliquely, from down to up, indicates the fourth beat (second unaccented part). The combination of these four gestures may be figured thus:—



It is of importance that the conductor, in delivering thus his different directions, should not move his arm much; and consequently, not allow his stick to pass over much space; for each of these gestures should operate nearly instantaneously;

or at least, take but so slight a movement as to be imperceptable. If this movement becomes perceptible, on the contrary, multiplied by the number of times that this gesture is repeated, it ends by throwing the conductor behindhand in the time he is beating, and by giving to his conducting a tardiness that proves injurious. This defect, moreover, has the result of needlessly fatiguing the conductor, and of producing exaggerated evolutions, verging on the ridiculous, which attract the spectators' attention, and become very disagreeble to witness.*

In the time, three in a bar, the first gesture made from up to down, is likewise universally adopted, for marking the first beat; but there are two ways of marking the second. The majority of orchestral con ductors indicate it by a gesture from left to right.

Some German Kapel-meisters do the contrary; and carry the stick from right to left.

This way has the disadvantage,—when the conductor turns his back to the orchestra, as takes place in theatres,—of permitting only a small number of musicians to perceive the very important indication of the second beat; the body of the conductor then hiding the movement of his arm. The other method of proceeding is preferable; since the conductor stretches his arm outwards, withdrawing it from his chest; and his stick, which he takes care to raise slightly above the level of his shoulder, remains perfectly visible to all eyes. When the conductor faces the players, it is immaterial whether he mark the second beat to the right, or to the left.

However that may be, the third beat of the time, three in a bar, is always marked like the last of the time, four in a bar; by an oblique movement upwards.

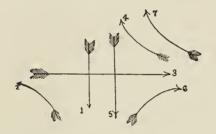
The times,—five and seven in a bar,—would be

Note: The mechanical, almost lifeless movements as here indicated, are but seldom seen in the present time, our modern conductors cultivating the graceful, 7et decisive, motions which enable the condutor to better impart to the orchestra his conception and feeling, and to better retain his control.

more comprehensible for the performers, if, instead of indicating them by a particular series of gestures, they were treated as though the one were composed of three and two in a bar, and the other composed of four and three.

Then, these times would be beaten thus:—

Example of seven in a bar:-



These different times, in order to be divided in this way, are assumed to belong to movements of moderate measure. It would not hold good, if their measure were either very quick or very slow.

The time, two in a bar, I have already signified, cannot be beaten otherwise than as we have before seen — whatever its degree of rapidity. But if, as an exception, it should be very slow, the conductor ought to subdivide it.

A time, four in a bar, very rapid, on the contrary, should be beaten two in a bar; the four accustomed gestures of a moderate movement becoming then so hurried, as to present nothing decided to the eye, and serving only to confuse the performer instead of giving him confidence. Moreover,—and this is of much more consequence,—the conductor, by making uselessly these four gestures in a quick movement, renders the pace of the rhythm awkward, and loses the freedom of gesture which a simple division of the time into its half would leave him.

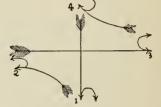
It is exactly the same for the time, three in a bar, fast $\frac{3}{4}$, or $\frac{3}{8}$. Then, the gesture of the second beat must be omitted; and, by remaining the period of a beat longer on the first, only raise the stick at the third.

It would be absurd to attempt to beat the three in a bar of one of Beethoven's scherzos.

The contrary is the case for these two times, as for

that of two in a bar. If the movement be very slow, each time must be divided; and consequently eight gestures must be made for the time, four in a bar, and six for the time, three in a bar, repeating (and shortening) each of the principle gestures we have before instanced.

Example of four in a bar, very slow:



The arm should remain wholly unaiding to the little supplementary gesture, instanced for the sub-division of the bar; merely the wrist causing the stick to move.

This division of the different times is intended to prevent the rhythmical divergings which might easily take place among the performers, during the interval which separates one beat from the other. For the conductor not indicating anything during this long period (rendered somewhat considerable by the extreme slowness of the movement), the players are then left entirely to themselves, without conductor; and as the rhythmical feeling is not the same with all, it follows that some hurry, while others slacken, and unity is soon destroyed. The only exception that could be made to this rule, would be in conducting a first-rate orchestra, composed of performers who are accustomed to play together, and know almost by heart the work they are executing. And even then, under these circumstances,—the inattention of a single player might occasion an accident.

This being fully understood, it will be seen that subdivision is still more essential for very slow times; as those of $\frac{6}{4}$, $\frac{6}{8}$, $\frac{9}{8}$, $\frac{12}{8}$, etc.

But these times — where the triple rhythm plays so important a part,— may be divided in various ways.

If the movement be brisk or moderate, it is well scarcely ever to indicate other than the simple beats of these times, according to the procedure adopted for the analogous simple times.

The times of § allegretto, and of § allegro, therefore, are to be beaten like those of two in a bar:—

the or 2 = or 2; the time, § allegro, should be beaten like that of three in a bar:— 3 moderato, or like that of § andantino; and the time, 12 moderate or allegro, like the time, simple four in a bar. But

if the movement is adagio, or, still more, largo-assai, and ante-mæstoso, it should be (according to the form of the melody, or the predominant design) beaten, either all the quavers, or a crotchet followed by a quaver for each beat.



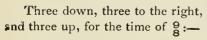
It is unnecessary, in this time, three in a bar, to mark all the quavers; the rhythm of a crotchet followed by a quaver in each beat suffices.

Then, as the subdivision, the little supplementary gesture for simple times, should be made; only, this subdivision will seperate each beat into two unequal portions, since it is requisite to indicate visibly the value of the crotchet, and that of the quaver.

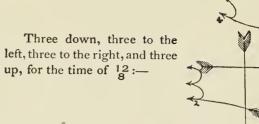
If the movement be still slower, there can be no hesitation; the only way to ensure unity of execution, is to beat all the quavers, whatever be the nature of the written bar:—



In these three measures, with their indicated kind of movement, the conductor must beat three quavers at a time, three down, and three up, for the time of §:—







A dilemma sometimes presents itself; it is when in a score, certain parts are given—for the sake of contrast—a triple rhythm, while others preserve the dual rhythm.



No doubt, if the wind-instrument parts in the above example be confided to players who are good musicians, there will be no need to change the manner of marking the bar, and the conductor may continue to subdivide it by six, or to divide it simply by two; the majority of players, however, in seeming to hesitate at the moment when, by employing the syncopated form, the triple rhythm intervenes amidst the dual rhythm, require assurance, which can be given by this means. The uncertainty occasioned them by the sudden appearance of this unexpected rhythm, and which the rest of the orchestra contradicts, always leads the performers to cast instinctively a glance towards the conductor, as if seeking his assistance. He should also look at them, turning rather towards them, and marking, by very slight gestures, the triple rhythm, as if the time were really three in a bar, in such a way that the violins and other instruments playing in dual rhythm, may not observe this change, which would quite put them out. From this compromise, it results that the new rhythm of three-time being marked furtively by the conductor, is then executed with steadiness; while the two-time rhythm, already firmly established, continues without difficulty, although, no longer indicated by the conductor. On the other hand, nothing, in my opinion, can be more blamable or more contrary to musical good sense, than the application of this procedure to passages where two rhythms of

opposite nature do not co-exist; and where merely syncopations are introduced. The conductor, dividing the bar by the number of accents he finds contained in it, then destroys (for all the auditors who see him) the effect of syncopation; and substitute a flat change of time, for a play of rhythm of the most bewitching interest. This is what takes place, if the accents be marked, instead of the beats, in the following passage from Beethoven's Pastoral Symphony:—



And if the six gestures above indicated be made instead of the four previously maintained, which display and make better felt the syncopation:—



This voluntary submission to rhythmical form which the author intended to be thwarted, is one of the gravest faults in style that a beater of the time can commit.

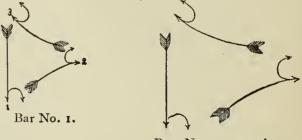
There is another dilemma, extremely troublesome for a conductor; and which demands all his presence of mind. It is that presented by the super-addition of different bars. It is easy to conduct a bar in two dual times placed above or beneath another bar in two triple times, if both be in the same kind of movement; they are then equal in duration, and there needs only to divide them in half, marking the two principal beats:—



But if, in the middle of a piece slow in movement, there be introduced a new form, brisk in movement, and if the composer (either for the sake of facilitating the execution of the quick movement, or because it was impossible to write otherwise) have adopted for this new movement the short bar which corresponds with it, there may then occur two or even three short bars super-added to a slow bar:—



The conductor's task is to guide and keep together these different bars of unequal number and dissimilar movement. He attains this, by commencing with dividing the beats in the andante bar No. 1, which precedes the entrance of the allegro in §, and by continuing to divide them still; but taking care to mark this division yet more. The players of the allegro in § then comprehend that the two gestures of the conductor represent the two beats of their short bar, while the players of the andante take these same gestures merely for a divided beat of their long bar.



Bars Nos. 2, 3, and so on.

This,—it will be seen,—is quite simple, in fact; because the division of the short bar, and the subdivisions of the long one, mutually correspond. The

following example, where a slow bar is super-added to the short ones, without this correspondence existing, is more awkward:—



Here the three bars allegro-assai, which precede the allegretto, are beaten in simple two-time, as usual. At the moment when the allegretto begins, the bar of which is double that of the preceding, and of the one maintained by the violas, the conductor marks two livided beats for the long bar, by two equal gestures down, and two others

The two large gestures divide the long bar in half,

up:-

and explain its value to the hautboys, without perplexing the violas, who maintain the brisk movement, on account of the little gesture which also divides in half their short bar.

From bar No. 3, the conductor ceases to divide thus the long bar by four, on account of the triple rhythm of the melody in §, which this gesture interferes with. He then confines himself to marking the two beats of the long bar; and the violas already launched in their rapid rhythm continue it without difficulty, comprehending exactly that each stroke of the conductor's stick marks merely the commencement of their short bar.

And this last observation exhibits with what care should be avoided dividing the beats of a bar, when a portion of the instruments or voices come to execute triplets upon these beats. This division, by cutting in half the second note of the triplet, would render its execution uncertain. It is necessary even to abstain from this division of the beats of a bar into two, just before the moment when the rhythmical or melodial design is about to be divided by three; in order not to give previously to the players, the impression of a rhythm contrary to that which they are going to hear given:—



In this example, the subdivision of the bar into six, or the division of the beats into two, is useful; and offers no incovenience during bar No. 1. The following gesture is then made:



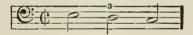
But it is requisite to cease it, from the beginning of bar No. 2; making only the simple gestures, on account of the triplet on the third beat, and on account of the one following it, which the double gestures would much interfere with.

In the famous ball-scene of Mozart's Don Giovanni, the difficulty of keeping together the three orchestras, written in three different measures, is less than might be thought. It is sufficient, always to mark downwards each beat of the tempo di minuetto:

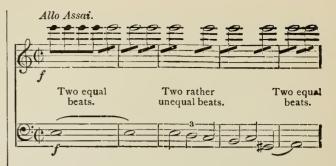


Once entered upon the combination, the little allegro in \(\frac{3}{8} \), of which one whole bar represents one third, or one beat of that of the minuetto, and the other allegro in \(\frac{2}{4} \), of which one whole bar represents two thirds, or two beats, correspond completely together, and with the principal theme; while the whole proceeds without the slightest confusion. All that is requisite, is, to make them come in properly.

A gross fault that I have seen committed, consists in enlarging the time of a piece in common-time, when the author has introduced into it triplets of minims:—



In such a case, the third minim adds nothing to the duration of the bar, as some conductors seem to imagine. They may, if they please, and if the movement be slow or moderate, make these passages by beating the bar wit' three beats; but the duration of the whole bar should remain precisely the same. In a case where these triplets should occur in a very quick bar in common-time, allegro-assai, the three gestures then cause confusion; and it is absolutely necessary to make only two,—one beat upon the first minim, and one upon the third. These gestures, awing to the quickness of the movement, differ little to the eye, from the two of the bar with two equal beats, and do not prevent the continuance of those parts of the orchestra which contain no triplets.



We will now speak of the conductor's method of beating, in recitatives. Here, as the singer or the instrumentalist is reciting, and being no longer subject to the regular division of the bar, it is requisite, while following him attentively, to make the orchestra strike with precision, and together, the chords or instrumental passages, with which the recitative is intermingled; and to make the harmony change at the proper instant, when the recitative is accompanied either by holding-notes, or by a tremolo in several parts, of which the least apparent, occasionally, is that which the conductor must most regard, since upon its motion depends the change of chord:



In this example, the conductor, while following the reciting part, not kept time to, has especially to attend to the viola part; and to make it move, at the proper moment, between the first and the second beat, from the F to the E, at the commencement of the second bar; without which, as this part is executed by several instrumentalists playing in unison, some of them would hold the F longer than the others, and a transient discord thence produced.

Many conductors have the habit, when directing the orchestra in recitatives, of paying no heed to the written division of the bar; and of marking a beat, up, before that where a brief chord occurs which the orchestra has to strike, even when this chord occurs on an unaccented part of the bar:—



In a passage such as this, they raise the arm at the sest which commences the bar, and lower it at the time of the chord.

I cannot approve such a method, which nothing justifies, and which may frequently occasion accidents in the execution. I do not see why, either, in recitatives, the bar should no longer be divided regulary, and the real beats be marked in their place, as in music that is kept time to. I therefore advise — for the preceding example - that the first beats should be made down, as usual, and the stick carried to the left, for striking the chord upon the second beat; and so on, for other analogous cases; always dividing the bar regularly. It is very important, moreover, to divide it according to the time previously indicated by the author; and not to forget,—if this time be allegro or maestoso, and if the reciting part have been some time reciting, unaccompanied, - to give to all the beats, when the orchestra comes in again, the value of those of an allegro or of a maestoso. For when the orchestra plays alone, it is in general kept time to; it plays without measured time only when it accompanies a voice or instrument in recitative.

In the exceptional case where the recitative is written for the orchestra itself, or for the chorus, or for a portion of either orchestra or chorus, as it is requisite to keep together, whether in unison, or in harmony, but without regular time, a certain number of performers, then it is the conductor himself who becomes the real reciter, and who gives to each beat of the bar the duration he judges fit. According to the form of the phrase, he now divides and subdivides the beats, now marks the accents, now the semi-quavers if there be any; and, in short, indicates with his stick the melodial form of the recitative.

It is an understood thing, that the performers, knowing their parts almost by heart, keep their eye constantly upon him; otherwise, neither security nor unity can be obtained.

In general, even for timed music, the conductor should require the players he directs, to look towards him as often as possible.

An orchestra which does not watch the conducting-stick, has no conductor. Often, after a pedalpoint, for instance, the conductor is obliged to refrain from marking the decisive gesture which is to determine the coming in of the orchestra, until he sees the eyes of all the performers fixed upon him. It is the duty of the conductor, during rehearsal, to accustom them to look towards him simultaneously at the important moment.



If, in the above bar, of which the first beat, marking a pedal-point, may be prolonged indefinitely, the rule were not observed that I have just indicated, the passage —



could not be uttered with firmness and unity; the players, not watching the conductor's stick, could not know when he decides the second beat, and resumes the movement suspended by the pedal-point.

This obligation for the performers to look at their conductor, necessarily implies an equal obligation on his part to let himself be well seen by them. He should,—whatever may be the disposal of the orchestra, whether on rows of steps, or on a horizontal plane,—place himself so as to form the centre of all surrounding eyes.

A conductor requires an especial platform, elevated in proportion as the number of performers is large and occupies much space. His desk should not be so high, as that the portion sustaining the score shall hide his face. For the expression of his countenance has much to do with the influence he exercises; and if there be no conductor for an orchestra that does not and will not watch him, there is hardly any either, if he cannot be well seen.

As to the employment of noises,—of any kind whatever, produced either by the stick of the conductor upon his desk, or by his foot upon the platform—they can call forth no other than unreserved reprehension. It is worse than a bad method; it is a barbarism. Only, if, in a theatre, the stage evolutions prevent the chorus-singers from seeing the conducting-stick, the conductor is compelled,—in order to ensure, after a pause, the taking up of a point by the chorus,—to indicate this point by marking the beat which pre-

cedes it, with a slight tap of his stick upon the desk. This exceptional circumstance, is the only one which can warrant the employment of an *indicating noise*; and even then, it is to be regretted that recourse must be had to it.

While speaking of chorus-singers, and of their operations in theatres, it may be here observed, that chorus-masters often allow themselves to beat time at the side-scenes, without seeing the conductor's stick, frequently even without hearing the orchestra. The result is, that this time, beaten more or less ill, not corresponding with that of the conductor, inevitably induces a rhythmical discordance between the choral and instrumental bodies, and subverts all unity instead of tending to maintain it.

There is another traditional barbarism, which lies within the province of an intelligent and active conductor to abolish. If a choral or instrumental piece be performed behind the scenes, without accompaniment from the principal orchestra, another conductor is absolutely essential to conduct it. If the orchestra accompany this portion, the first conductor, who hears the distant music, is then strictly bound to let himself be guided by the second; and to follow, by ear, his time. But if - as frequently happens in modern music - the sound of the chief orchestra hinders the conductor from hearing that which is being performed at a distance from him, the intervention of a special conducting mechanism becomes indispensable, in order to establish instantaneous communication between him and the distant performers. Many attempts, more or less ingenious, have been made of this kind; the result of which has not everywhere answered expectation. Covent Garden Theatre, in London, moved by the conductor's foot, acts tolerably well. But the electric metronome, put up by Mr. Van Bruge in the Brussels Theatre, leaves nothing to be desired. It consists of an apparatus of copper ribbons, leading from a Voltaic battery placed beneath the stage, being attached to the conductor's desk, and terminating in a movable stick fastened at one end on a pivot before a board, at a certain distance from the orchestral conductor. To this latter's desk is affixed a key of copper, something like the ivory key of a pianoforte; it is elastic, and provided on the interior with a protuberance of about a quater of an inch long. Immediately beneath this protuberance, is a little cup, also of copper, filled with quicksilver. At the instant when the orchestral conductor, desiring to mark any particular beat of his bar, presses with the forefinger

of his left hand (his right being occupied in holding, as usual, the conducting-stick) the copper key, this key is lowered, the protuberance passes into the cup filled with quick-silver, a slight electric spark is emitted, and the stick placed at the other extremity of the copper ribbon makes an oscillation before its board. This communication of the fluid, and this movement, are quite simultaneous; whatever the distance be that is traversed.

The performers being grouped behind the scenes, their eyes fixed upon the stick of the electric metronome, are thus directly subjected to the conductor's sway; who could thus—were it needful—conduct from the middle of the Opera orchestra in Paris. a piece of music performed at Versailles.

It is merely requisite to agree beforehand with the chorus-singers, or with their conductor (if, as an additional precaution, they have one), the way in which the orchestral conductor beats the time; whether he mark all the principal beats, or only the first of the bar,—since the oscillations of the stick moved by electricity being always from right to left, they indicate nothing precise in this respect.

I acknowledge, however, that many chorus-masters, or sub-conductors of orchestras, are sometimes of real utility, and even indispensable for the maintenance of unity among very large masses of performers. When these masses are obliged to be so disposed as that one portion of these players or chorus-singers turn their back on the conductor, he needs a certain number of sub-beaters of the time placed before those of the performers who cannot see the chief conductor, and charged with repeating all his signals. In order that this repetition shall be precise, the sub-conductors must be careful never to take their eyes off the chief conductor's stick for a single instant. If, in order to look at their score, they cease for only three bars, to watch him, a discrepancy arises immediately between their time and his; and all is lost.

The more distant the orchestral conductor is from the performers he directs, the more his influence over them is diminished.

The best way would be to have several sub-conductor's, with several electric metronomes beating before their eyes the principal beats of the bar.

And now,—should the orchestral conductor give the time standing, or sitting down?

If in theatres, where they perform scores of immense length, it is very difficult to support the fatigue of remaining on foot the whole evening, it is none the less true that the orchestral coductor, when seated,

loses a portion of his power, and cannot give free course to his animation, if he possess any.

Then, should he conduct, reading from a full score, or from a first violin part (leader's copy), as is customary in some theatres? It is evident that he should have before him a full score. To conduct by means of a part containing only the principal instrumental coming-in points, the bass, and the melody, needlessly demands an effort of memory from the conductor, who has not at hand the full score; and exposes him, moreover, if he happen to tell one of the performers that he is wrong, whose part he cannot examine, to the chance of this latter's replying: "How do you know."

The disposal and grouping of the players and chorus-singers comes also within the province of the conductor; particularly for concerts. It is impossible to indicate arbitrarily the best method of grouping the assemblage of performers in a theatre or concertroom; the shape and the arrangement of the interior of these places, necessarily influences the course to be taken in such a case. Let us add, that they depend, moreover, upon the number of performers requiring to be grouped; and, on some occasions, upon the style of composition adopted by the author whose work is to be performed.

In general, for concerts, the disposal of the orchestra which seems best, is this: An amphitheatre of eight, or, at least, five rows is indispensable. The semicircular form is the best, for this amphitheatre. If it be large enough to contain the whole orchestra, the entire mass of instrumentalists will be disposed along these rows; the first violins in front, on the right (facing the public); the second violins in front on the left; the violas in the middle, between the two groups of violins; the flutes, hautboys, clarinets, horns, and bassoons behind the first violins; a double rank of violoncellos and double-basses behind the second violins; the trumpets, cornets, trombones, and tubas behind the violas; the rest of the violoncellos and double-basses behind the wooden wind instruments; the harps in the foreground, close to the orchestral conductor; the kettle-drums, and other instruments of percussion behind or in the centre of the brass instruments; the orchestral conductor, turning his back to the public, at the base of the orchestra and near to the foremost desks of the first and second violins.

There should be a horizontal flooring, or stage, more or less wide, extending in front of the first rows of the amphitheatre. On this flooring the chorus-

singers should be placed, in form of a fan, turned three-quarters towards the public, so that all shall be able easily to see the motions of the orchestral conductor. The grouping of the chorus-singers in consonance with their respective order of voice, will differ, according as the author has written in three, four, or six parts. At any rate the women — sopranos and contraltos — should be in front, seated; the tenors standing behind the contraltos; and the basses standing behind the sopranos.

The solo-singers should occupy the centre, and foremost part of the front stage; and should always place themselves in such a way as to be able, by slightly turning the head, to see the conducting-stick.

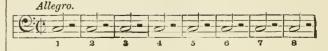
For the rest, I repeat, these indications can be put approximative; they may be, for many reasons, modified in various ways.

It is everywhere of the greatest consequence that the chorus-singers placed on the front of the stage, shall occupy a plane somewhat lower than that of the violins; otherwise they would considerably deaden the sound of these latter.

For the same reason, if, in front of the orchestra, there are not other rows for the choir, it is absolutely needful that the woman should be seated, and the men remain standing up; in order that the voices of the tenors and basses, proceeding from a more elevated point than those of the sopranos and contraltos, may come forth freely, and be neither stifled nor intercepted.

When the presence of the chorus-singers in from of the orchestra is not necessary, the conductor will take care to send them away; since this large number of human bodies injures the sonorousness of the instruments. A symphony, performed by an orchestra thus more or less stifled, loses much of its effect.

There are yet other precautions, relative especially to the orchestra, which the conductor may also take, to avoid certain defects in performance. The instruments of percussion, placed as I have indicated, upon one of the last rows of the orchestra, have a tendency to abate the rhythm, and to slacken the time. A series of strokes on the long drum struck at regular intervals in quick movement like the following:—



will sometimes produce the complete destruction of a fine rhythmical progression, by checking the onward bound of the rest of the orchestra, and destroying the

unity. Almost always, the long drum player, from want of remarking the original time given by the conductor, remains somewhat behind-hand in striking his first stoke. This retardment, multiplied by the number of strokes which follow the first one, soon produces — as may be imagined — a rhythmical discrepancy of the most fatal effect. The conductor,all whose efforts are then in vain to re-establish unanimity, - has only one thing left to do; which is, to insist that the long drum player shall count beforehand the number of strokes to be given the passage in question, and that, knowing his part, he shall no longer look into his copy, but keep his eyes constantly fixed upon the conducting-stick; by which means, he will at once follow the time without the slightest want of precision.

Another retardment, arising from a different cause, frequently takes place in the trumpet-parts; it is when they contain a quick flow of passages such as this:—



The trumpet-player, instead of taking breath before the first of these three bars, takes breath at their commencement, during the quaver-rest A; and not counting for anything the short time it has taken him to breathe, gives nevertheless its whole value to the quaver-rest, which thus becomes superadded to the value of the first bar. The result of this, is the following effect:—



an effect, the worst, that the final accent, struck at the commencement of the third bar, the rest of the orchestra comes a third of the time too slow in the trumpets; and destroys unity in the striking of the last chord.

To obviate this, the conductor must first previously warn the players of this inexactness, into which they almost all are led to fall unawares; and then, while conducting, must cast a glance towards them at the decisive moment, and anticipate a little, by beating the first beat of the bar where they come in: it is incredible how difficult it is to prevent trumpet-players from doubling the value of a quaverrest thus placed.

When a long accelerando, little by little, is indicated by the composer, for passing from an allegromoderato to a presto, the majority of orchestral conductors hurry the time by jerks, instead of quickening it equally throughout, by insensible onward rate.

This should be cautiously avoided. remark applies to the converse proposition. even still more difficult to slacken smoothly, and without checks, quick time so as to transpose it little by little into a slow time. Often, from a desire to testify zeal, or from defect of delivery in his musical feeling, a conductor demands from his players an exaggeration of nice gradations. He comprehends neither the character nor the style of the piece. The gradations then become so many blemishes; the accents, yells; the intentions of the poor composer are totally disfigured and perverted; while those of the orchestral conductor - however politely meant they may be — are none the less injurious: like the caresses of the ass in the fable, who crushed his master when fondling him.

And now let us instance many deplorable abuses that have obtained in almost all the orchestras of Europe; abuses which reduce composers to despair, and which it is the duty of conductors to abolish as soon as possible.

Performers playing stringed instruments, will rarely give themselves the trouble to play a tremolo, they substitute for this very characteristic effect, a tame repitition of the note, half, and sometimes three-quarters slower than the one whence results the tremolo: instead of demisemiquavers, they make triple or double ones; and in lieu of producing sixty-four notes in a bar in four-time (adagio), they produce only thirty-two, or even sixteen. The action of the arm necessary for producing a true tremolo, demands, doubtless, too great an effort. This idleness is intolerable.

Many double-bass players permit themselves—from idleness, also, or from a dread of being unable to achieve certain difficulties—to simplify their part. This race of simplifiers, be it said, has existed for years; but it cannot endure any longer. In ancient works, the double-bass parts were extremely simple; therefore there can be no reason to impoverish them still more: those in modern scores are rather more difficult, it is true; but, with very few exceptions, there is nothing in them of impossible execution; composers, masters of their art, write them with care, and as they ought to be executed. If it be from idleness that the simplifiers pervert them, the energetic

orchestral conductor is armed with the necessary authority to compel the fulfilment of their duty. If it be from incapacity, let him dismiss them. It is his best interest to rid himself of instrumentalists who cannot play their instrument.

Flute-players, ascustomed to be above the other wind instruments, and not admitting that their part can be written below that of clarinets or haut-boys, frequently transpose entire passages to an octave higher. The conductor, if he do not carefully peruse his score, if he be not thoroughly acquainted with the work he is conducting, or if his ear lack keenness, will not perceive this strange liberty taken by flautists. Nevertheless, multitudes of instances exist; and care should be taken to banish them entirely.

It occurs everywhere (I do not say in some orchestras only)—it occurs everywhere, I repeat, that violinists who have, as is well known, to play ten, fifteen, twenty of them, the same part in unison, do not count their bars' rest; and always from idleness, relying on the others doing it. Whence it follows, that scarcely the half of them come in again at the right moment; while the rest still hold their instrument under their left arm, and look about them: thus the point is greatly weakened, if not entirely missed.

An orchestra,— the instruments of which are not in tune each, and with each other,— is a monstrosity; the conductor, therefore, should take the greatest care that the musicians tune accurately. But this operation should not be performed in the presence of the public; and moreover, every instrumental rumour,— every kind of preluding, between the acts, constitutes a real offence to all civilized auditors. The bad training of an orchestra, and its musical mediocrity, is to be inferred from the impertinent noise it makes during the periods of quiet, at an opera or concert.

It is also imperative for a conductor not to allow clarinet-players to use always the same instrument (the clarinet in B^{\flat}), without regard to the author's indications. Just as if the different clarinets — those in D and in A, particularly—had not a special character of their own, of which the intelligent composer knows the exact value; and as if the clarinet in A had not moreover a low semitone more than the clarinet in B^{\flat} , — the C^{\sharp} of excellent effect, which E gives

only the D, on the clarinet in B?.

A habit, as vicious, and still more pernicious, has crept in since the introduction of horns with cylinders and pistons, in many orchestras; it is that of playing in open sounds, by means of the new mechanism adapted to the instrument, those notes intended by the composer to be produced in closed sounds, by means of the right hand within the bell. Moreover, the horn-players, now-a-days, on account of the facility afforded by the pistons or cylinders of putting their instrument into different keys, use only the horn in F, whatever may be the key indicated by the author.

He should also set his face against the economical fashion adopted by certain theatres—called lyric—of causing the cymbals and the long drum to be played by the same performer. The sound of the cymbals when attached to the long drum,—as they must be to render this economy feasible,—is an ignoble noise, fit only for bands at tea-gardens. This custom moreover, leads mediocre composers into the habit of never employing one of these instruments without the other, and of considering their use as solely confined to the forcible marking of the accented parts of the bar. This is an idea fruitful in noisy platitudes; and one that has brought upon us the ridiculous excesses beneath which, if there be not a stop put to them, dramatic music will sooner or later sink.

I conclude, by expressing sincere regret at beholding choral and orchestral studies still so badly organized. Everywhere, for grand choral and instrumental compositions, the system of rehearsals in the mass, is maintained. They make all the chorussingers study at once, on the one hand; and all the instrumentalists at once, on the other. Deplorable errors innumerable mistakes, are thus committed,—particularly in the intermediate parts; errors which the chorus-master and the conductor do not perceive. Once established, these errors degenerate into habits; and become part and parcel of the execution.

The hapless chorus-singers, moreover, during their studies, such as they are, are by far the worst treated of all the performers. Instead of giving them a good conductor knowing the times of the different movements accurately, and proficient in the art of singing, to beat the time, and make critical observations; a good pianist, playing from a well arranged pianoforte score, upon a good piano; and a violinist, to play in unison or in octave with the voices each part learned alone: instead of these three indispensable artists, they commit them (in two-thirds of the lyric theatres of Europe) to the superintendance of a single man, who has no more idea of the art of conduct-

ing, than of that of singing, generally very little of a musician, who, seated before a battered out-of-tune instrument, tries to decipher a dislocated score which he does not know, strikes false chords, major when they are minor, or vice-versa, and under the pretext of conducting and of accompanying by himself, employs his right hand in setting the chorus-singers wrong in their time, and his left hand in setting them wrongly in tune.

A faithful, well-colored, clever interpretation of a modern work, even when confided to artists of a high order, can only be obtained, I firmly believe, by partial rehearsals. Each part of a chorus should be studied singly, until it be thoroughly known, before admitting it collectively. The same step should be taken with regard to the orchestra, for a symphony at all complicated. The violins should first be practised alone; the violas and basses by themselves; the wooden wind instruments (with a small band of

stringed instruments, to fill in the rests, and accustomenthe wind instruments to the points of re-entrance); the brass instruments the same; and very often it is necessary to practise alone the instruments of percussion; and lastly, the harps, if they be numerous. The studies, in combination, are then far more profitable, and more rapid; and there is then good hope of attaining a fidelity of interpretation, now, alas, but too rare.

The performances obtained by the old method of study, are merely approaches to achievement; beneath which so very many master-pieces have succumbed. The superintending conductor, after the butchering of a master, none the less serenely lays down his stick with a satisfied smile; and if some few misgivings remain with him as to the mode in which he has fulfilled his task, should no one venture at the close to dispute its accomplishment, he murmurs aside:—"Bah! væ victis."

HECTOR BERLIOZ.











